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An Address.[1]

PHYSICIAN, HEAL THYSELF.

By MELVILLE E. CHINNER,

President of the South Australian Branch of the British Medical Association.

TONIGHT I have taken as a theme the statement from the Gospel according to St. Luke, Chapter IV, Verse 23: "Physician, heal thyself." I will try to develop my thesis under three headings: (i) to preserve our own health; (ii) to maintain our position as leaders of society; (iii) to retain and maintain the moral and ethical standards of the medical profession.

If we are to carry our chosen work to its logical conclusion, we must endeavour to preserve our health. I say that it is our bounden duty to guard our health with everything within our power, or else we are not able faithfully to carry out our work of service to the people who have placed their trust, and often their lives, in our hands. Also, the early and premature death of such trained personnel becomes a major economic loss, as a medical man increases in value with age and experience.

To maintain our position as leaders of society, we must be thoroughly and broadly educated; we must see that our medical knowledge is never allowed to fall behind, as medicine is not an exact science, and as continual study is necessary.

We must retain and maintain the moral and ethical standards of the medical profession, which have been jealously guarded and built up by our predecessors, and hold the honour and esteem of the public.

Before discussing the modern ills and dangers of the medical practitioner's mode of life, I may quote[1] from Bernardo Ramazinni (1633-1714), the "Father of Industrial Medicine", who wrote the following lines in his work "Of the Diseases of Learned Men":

> I have observed that all of the famous lawyers and public ministers . . . were afflicted with a thousand sorts of diseases and cursed the profession they were engaged in.
>
> The physicians fare much better, I mean those of them who run about and visit their patients and mind the practice of physic, for they are not subject to such a train of diseases; and if they happen to be ill, they owe their illness not to a standing or sedentary life, but to their constant walking and running about.
>
> I have often wondered how it came to pass that, when epidemical diseases . . . were raging all about, the practitioners of physics escape free by a certain privilege as if it were tacked to their profession; and upon mature consideration, I am of the opinion this good luck is owing to their caution, to their great

[1] Read at the annual meeting of the South Australian Branch of the British Medical Association on June 26, 1957.

[1] Owing to the unavailability of certain reference books, I am quoting freely from an excellent article by Herbert K. Abrams, published in *The General Practitioner*, January, 1954.

> exercise, and to the cheerfulness of their mind, when they return with full pockets from visiting their patients. In earnest, I never observed the physicians to be so much out of order, as when nobody else is sick; and this I have seen verified in a particular manner in these last five years which have been very healthy, without the appearance of any epidemical distemper.
>
> However, physicians do not always escape with impunity. . . . Ramazinni considered surgeons separately in his essay, "Of the Diseases of Surgeons and Others Employed in Frictions and in Inunctions for Venereal cases". There he wrote: Nowadays those who rub the mercurial ointment on pocky persons are the meaner sort of surgeons who undertake the office to make a little money by it; for the better sort of surgeons decline such a sordid piece of service which is likewise accompanied with danger. It is true . . . they make use of a glove, but all that precaution is not sufficient to keep the mercurial atoms from penetrating the leather; neither can all their caution guard against the exhalations . . . and it is well known that these exhalations entering the body by the mouth and nostrils prove very injurious to the brain and nerve. . . .

So even 300 years ago the medical man was not free from hazards.

There is no doubt that the medical profession of today is subject to tremendous strains, owing to the demands of the people and, maybe, to the desire for larger incomes. A survey in the United States of America in 1952 gave the following information: the average net income of a medical man was $15,262, that of a general practitioner $14,098, and that of a specialist physician $17,112; the average income of the wage-earner and salaried worker was $3252. The United States Department of Commerce showed in 1949 that the net income of physicians was $11,744, whilst non-salaried lawyers earned $8083 and dentists $7146. In 1953, Rusk *et alii*, writing in *The New England Journal of Medicine*, stated that medical men worked 60 hours a week to earn their incomes; it is therefore obvious that great mental and physical strain is necessary to earn those incomes. Dublin and Spiegelman, comparing the numbers of deaths of male physicians and of white males in the population of the United States of America aged 25 years and over, found that the death rate of physicians was higher, and in particular for the following conditions: leuchæmias and aleuchæmias, biliary calculi and other diseases of the gall-bladder, intracranial lesions of vascular origin, diseases of the heart and coronary vessels, arteriosclerosis, cirrhosis of the liver, pneumonia and influenza, *diabetes mellitus* and suicide. But if figures of actual deaths are given, coronary disease in physicians accounted for 845·3 deaths per 100,000, compared with 713·7 in the general population. Smith, from the Mayo Clinic, gave the following incidence of coronary disease in 1800 consecutive patients on an occupational basis: farmers, 2·5%; labourers, 2·6%; clergymen, 4·6%; lawyers, 4·6%; bankers, 5·3%; physicians, 10·7%. Stewart, writing on coronary disease and modern stress, gives the following figures for death ratios by occupation for coronary disease (100 is the standard): agricultural workers, 32; coal-miners below ground, 40; banking-insurance officials, 183; Anglican clergy, 218; physicians and surgeons, 368. Stewart states that "heart disease is in reality an occupational hazard of the medical profession". The Spens Committee Report suggests that the doctor's life is shortened mainly by heart disease due to the "strain of medical practice". There is not complete unanimity amongst writers regarding the frequency of coronary disease among medical men. Some writers, including Samuel Levine, believe that the increased incidence may be due to better diagnosis and reporting; but I think the bulk of the literature is against this.

Assuming that coronary disease is one of the great killers of our profession, we must try to do something to prevent atheroma, which is the pathological basis of coronary sclerosis. Page states that "Atheromatosis is civilised man's greatest killer, and that our knowledge of its nature is primitive, and that no ante-mortem diagnosis is possible". Also, up to the present there has been no method of attack upon this state once it has become established. Hence, we must endeavour to prevent its occurrence. It will be obvious that this is very difficult, as we know so little about the mechanism of its development. Katz states that one factor possibly conditioning the variable incidence of hypertension, and perhaps atherosclerosis, may be the general life situation—its pace and stress and the influence of temperament; diet plays a decisive role. Page also states that countries taking diets of high caloric, high lipid content have a high incidence of atherosclerosis; obesity itself does not appear to be the factor, but rather, high intakes of animal fats. Dock considers that animal fats aid the reabsorption of biliary cholesterol, and hence tend to raise the blood cholesterol level, and that part which is bound to beta globulin seems to lead to early atherosclerosis. Thus it would appear to be much better to live on the unsaturated fatty acids of vegetable origin, which tend to lower the blood cholesterol level. Also, in reverse, this degenerative process is low in some countries with a very low standard of living, and the disease tends to diminish in a country whose population is subjected to severe privations during war. This state of atherosclerosis is very common in the United States of America. Walker states that coronary atherosclerosis is practically a universal condition among American men. It has been demonstrated in 77% of United States soldiers killed in Korea, at an average age of 22 years, and is even more frequent in older men.

Numerous suggestions as to prevention are current, some based on experimental work. It has been shown that heparin and heparin-like substances have the power to clear the blood of lipid substances, and that this heparin blood concentration tends to diminish with age. This, of course, would necessitate the constant administration of heparin, with possible danger from its effect on the clotting properties of blood. More recent work published by Bisterman and Evans suggests that a substance called laminarin sulphate M has all the antilipæmic properties without its anticoagulant action; this substance does offer some basis for both prevention and treatment. Also, œstrogens tend to lessen the development of atherosclerosis. This may account for the lower incidence of atheroma in the female; but the feminizing action of œstrogens may deter men from using it. An interesting and possibly valuable piece of research has been done by various workers using sitosterol. This substance interferes with cholesterol absorption, whether it appears in the diet or as endogenously produced cholesterol excreted into the intestine in bile. Best *et alii* have shown that treatment with sitosterol in 12 cases of hypercholesterolæmia produced a mean fall of 16% in the blood cholesterol level, and in two normal subjects it produced a fall of 6·8%. It is possible that this work may lead to a means of treatment as well as prevention of atheroma.

So much for the various ways of preventing and treating atherosclerosis. Can we state any reasonably accurate method of diagnosing atherosclerosis in the pre-clinical stages? Much has been written about the lipoproteins of various-sized molecules, and it has been thought that the Sf 12-20 group were the most important. A recent publication by Lawry, of Boston, summarizes the position as follows: "The measurement of total serum cholesterol remains the most practical laboratory measurement for aiding in the identification of people with gross disturbances of lipid metabolism which predispose to coronary disease." In the light of these findings, I believe that all doctors over the age of, say, 50 years may with advantage have their serum cholesterol levels estimated; if the levels are elevated, some active treatment and dietary regime may be of value in helping us to forestall this great killer.

We have not touched on the stress factor in a medical man's life. Can we lessen this? We can do so by taking regular holidays, and I believe that several short holidays are better than one long one. Also, if we could curb that inherent desire for larger incomes, we would not work those long hours that I mentioned earlier, although we must always realize that we must give a service. A critic will immediately say that this is not possible, as *locum tenentes* are not available. That is so, except at certain

seasons, when maybe the new graduates appear; but a recent opinion has been expressed that the doctor shortage is rapidly being overcome. However, we can overcome this problem by group or partnership practice, and I believe that this is one sure way of obtaining regular relaxation and holidays. Our incomes may not be so great by this method, but neither is our tax so great. There is not much consolation in being "the richest man in the cemetery". I think diversionary work is also a release from stress; by this I mean hobbies of any kind, so long as they are really soul-consuming and take one's mind away from the daily toil. I suppose the greatest and most potent reason for this incessant work and effort for greater incomes is to assure our security in our old age, and because of heavy taxation it is becoming progressively more difficult to obtain this security. I think high taxation has come to stay, as we are daily becoming more socialized and closer to that "welfare State" of which many politicians dream. In a measure we can offset this high taxation by means of full insurance to the limit of taxation allowance; there is also the gradually spreading idea of superannuation for the self-employed person. I believe that this should, and may one day, be developed to a high degree, and that it may help to relieve some of the urgency and stress of practice. This theme may even be developed on a national basis, as speakers are beginning to urge a national and compulsory form of superannuation for all persons. There is at present a tendency for practitioners to form themselves into companies, and I believe that many companies do exist, especially in New South Wales. That method has some temporary advantages in lower annual tax and freedom from provisional tax and maybe lower death duties; but to me it has very great disadvantages; as a company cannot legally practise medicine, it cannot sue for fees. Recently a Queen's counsel was quoted in the Press as saying that medical benefits could not be paid to a patient treated by a company *etc.* I think this practice of company formation could very well bounce back on us as practitioners and also hit our patients, and we have no guarantee that the Government will not alter its regulations when it notices the drop in tax revenue. I feel that we are losing dignity by the wholesale adoption of these means, and that we should keep in step with other great professions, such as the law, and look askance at this method. We should try to make the Government realize that the self-employed person does suffer a tax disability, and aim for better methods of superannuation.

These suggestions are made with the full realization of the great difficulty of carrying them into effect. However, in the light of present knowledge, I believe that if we are to lessen the number of our premature deaths from coronary disease, we must to some extent follow these suggestions.

Now, as to the second part of my theme—namely, education—I believe that all present-day education is rather too channelled, and that we learn only those things pertinent to our chosen profession. It is regrettable that this state of affairs has gradually crept into our secondary schools and universities. The past is full of accounts of medical men not only proficient in their own chosen sphere, but also masters of the arts. If one browses through the biographical sketches of the "Roll of the College of Physicians", by Munk, one finds countless examples of this. One such quotation from the autobiography of Sir Banjamin Brodie, Bart., concerns a Dr. Chambers (1786-1844): "Dr. Chambers was a thorough gentleman in the best sense of the word; an accomplished scholar and had been a diligent student in his profession." Do we today deserve such eulogy from the pen of a friend? I think we have a slight excuse these days, because I am sure we do much more work in a day than our predecessors, and probably have much less time to study classics. The University of Adelaide is aware of this narrowness of pre-medical education, and is about to put a subject into the first year that will, I trust, widen the student's education; but I believe that the change should go back to the secondary schools, and to the provision of a curriculum much wider and broader in the arts and humanities. If we are to retain our high status in the community, then we must be thoroughly and thoughtfully educated, and I trust that those in authority will see that this hard-won social position is not lost. After graduation our education must not stop if we are to be true to our calling—that at all times we do the best for our patients who have placed their trust in us. Let those of us who are privileged to teach do so freely, as a debt we owe to our fellows; the rest of us should seek for knowledge continually, compelled by our conscience always to push onwards. If we do this, we shall never lose the honour, trust and esteem of our fellow men.

My third point is an ethical one, and in this respect I believe that we may all search our souls and find some faults. Plato wrote in "The Republic": "No physician, in so far as he is a physician, considers his own good in what he prescribes, but the good of his patient; for the true physician is also a ruler, having the human body as a subject, and is not a mere money maker." To me our ethics are in two divisions—one which concerns our relationship to the State, and the other which concerns our relationship to fellow practitioners. Today we are working in a State where large sums of money are paid out by the State for medical services; these medical Acts of Parliament are to some extent a compromise between the Government and the medical profession, allowing us a great deal of freedom of practice without undue regulations. This present rather happy relationship between the Government and the profession can last only if we carry out such Acts on the highest plane. If we do not, there may be Governments that will readily seize upon our shortcomings in order to place us on a salaried service, and this would mean loss of the profession's freedom, which we should jealously guard. I am happy to say that, except for an extremely small minority, we are all endeavouring to make the present scheme function smoothly. When these ethical breaches against the State occur, I think it is often the patient's fault for demanding things—for example, drugs. The young practitioner is afraid to defend his beliefs for fear of losing a patient, and he makes visits because the patient demands them, especially as the latter is paying so little for them.

Another point that will maintain the ethical status of our profession in the eyes of the public is our availability when we are really wanted. It is upon this point that I fear the profession is toppling from its high position; people are beginning to criticize us for lack of service. This would have been almost sacrilege four or five decades ago, but it is not so now; as a group we have few friends. Can I answer this challenge? First, are the right people entering the medical profession? At times, I am sure, a boy or girl enters it because of family demands or traditional family occupation, or with a lack of appreciation of the great personal demands and sacrifice that are required. Secondly, since the last war, throughout all walks of life there has been a sense of *laissez-faire*, "why worry?", no true pride in workmanship—call it what you will; the idea is to get one's money in the shortest time with the least amount of work. This madness in the population as a whole must cease; we must return to a better sense of values; we ourselves must give greater value for our incomes. Thirdly, large incomes have been possible over recent years, and there have not been enough medical men available to do the work, and so an unfortunate sense of independence has arisen. This may be an estimable quality in some callings, but in medicine a person in distress wants immediate and early attention. He is not able to decide whether his trouble is serious or not, but he wants that comfort and sense of security which only the trained medical practitioner can give. I believe that the root of our trouble is here; this is the service we are not giving. We are selling medicine as a common commodity, with all the modern shortcomings of lack of delivery, early closing, short hours, and no service or little service at week-ends and on public holidays. We are certain to be pawns on a political chess-board in a few months' time, our shortcomings will be used against us, and complete socialization of medicine may be the result. I would be the first to discourage the frivolous call; but

after making reasonable inquiries as to the urgency of the call, I think we owe it to the people to make it. We have all experienced that state of satisfaction which comes to us after having rendered a service that really helped someone in distress, and we have all received the truly grateful thanks of patient and relatives for having given that service. It is this inexplicable relationship between doctor and patient that has enabled us to hold the love and esteem of our patients over the centuries, and we must put our house in order and try to regain it. At this point it could be said that at one stage of my address I am urging doctors to reduce their work so as to lessen stress *etc.*, and at another I am chiding them for insufficient service. I am sure that we must always make this initial call when requested, as the patient is anxious and wishes to have attention and to have his confidence restored. Also, I think our work could be lessened if we could educate our patients to understand that frequent visiting in non-serious illness is not necessary, even if they have not to pay for most of it.

As for the ethics of the relationship between ourselves, I have often been asked by young practitioners: "Where are the rules of medical ethics?" I say that there are none, except that we observe the Golden Rule when dealing with each other. During my term of office, complaints about other practitioners have been few and far between, and those which have occurred, almost without exception, have been due to thoughtlessness and inexperience. I truly believe that we all honestly try to observe the Golden Rule in our relationships one with another.

I have tried in this address to trace causes of illness in our profession and methods of combating it, so that we can live long to give service in the work we love; to point out that it is necessary for us to be continually learning in order to merit our patients' trust; and finally, to point out that we must observe the highest ethical standards in relation to both the State and our fellow practitioners in order to improve and hold our present status. I think that the following quotation from the "Precepts" of Hippocrates, Chapter VI, sets out the principles and points that I have endeavoured to make:

> Sometimes give your services for nothing, calling to mind a previous benefaction or present satisfaction. And if there be an opportunity of serving one who is a stranger in financial straits, give full assistance to all such. For where there is love of man, there is also love of art. For some patients, though conscious that their condition is perilous, recover health simply through contentment with the goodness of the physician. And it is well to superintend the sick to make them well, to care for the healthy to keep them well, also to care for one's self, so as to observe what is seemly.

THE DIAGNOSIS AND CONSERVATIVE MANAGEMENT OF PERIPHERAL VASCULAR DISEASE.[1]

By John B. Hickie,
St. Vincent's Hospital, Sydney.

The increasing frequency of peripheral vascular disease (Marquardt and Cummins, 1956) and the surgical interest in it challenge each of us to re-examine our knowledge of the physical signs of these disorders. As always, a full history and a complete physical examination are a minimum requirement. The latter is an exercise in observation and deduction, based on an appreciation of the discipline of eliciting physical signs, a warm room, a trained hand and eye and a healthy scepticism towards the defeatist attitude surrounding this group of disorders.

Pain is the commonest symptom, and is of two types—pain on exercise and pain at rest. Intermittent claudication is a symptom and not a disease, and is the characteristic of occlusive arterial disease of the lower limbs. The classical story is of fatigue, soreness and finally cramp of increasing severity. This is brought on only by continuous exercise, and is promptly relieved by rest. It never occurs as a result of standing, sitting or reclining, and has no relationship to nocturnal cramps, which are not a symptom of arterial disease. It may be followed by soreness and tenderness to pressure. The pain classically occurs in the calf, but it may occur in the feet, the anterior tibial group of muscles, the thigh, the buttock and even the upper limb. If it occurs in the feet, the patient may feel as though he is walking on a stone. The site of the pain is often a guide to the level of the arterial block, which is most frequently in the superficial femoral artery or the upper part of the popliteal artery (Barnett and St. Clair, 1956). A block in the aorta and iliac vessels leads to Leriche's syndrome of pain in the thigh and buttock, impotence, wasting and hypotonia of the thigh and buttock, and weakness, delay or absence of the femoral pulses. This syndrome is easily confused with sciatica. Kekwick *et alii* (1952) found that such a block occurred in 15% of patients with intermittent claudication. This figure seems unduly high, and we have found it in 5% of our series. Intermittent claudication must be differentiated from pain due to osteoarthritis, deep venous stasis and peripheral neuropathy.

Pain at rest is usually associated with intermittent claudication. The pain is localized to one limb or digit, and is influenced by posture, elevation usually increasing its severity, while relief is obtained when the dependent position is adopted. Extremely severe pain associated with ulceration and gangrene in *thromboangiitis obliterans* produces the classical picture of the wasted, gaunt patient sitting cross-legged or with the foot hanging over the side of the bed, smoking cigarette after cigarette, overlooking the ordinary hygienic measures, dreading the approach of night, groaning and rubbing the affected limb, asking earnestly for analgesics and finally begging for amputation of the limb. Arteriosclerosis causes severe persistent rest pain if there is serious tissue ischæmia or ischæmic neuropathy. The former is a warning of imminent necrosis and gangrene. The latter is associated with severe shooting, burning pain and paræsthesia. Sudden arterial occlusion may cause the sudden onset of severe pain; but it is just as often followed by the gradual onset of mild pain associated with numbness and coldness. The pain in Raynaud's disease is usually mild, and is associated with numbness and stiffness during the phase of pallor, and cyanosis followed by tingling during the phase of rubor. If severe pain occurs, there is an underlying organic lesion such as *thromboangiitis obliterans* or a thrombosis. The patient may also complain of coldness of an extremity, paræsthesia, alteration in colour and trophic changes.

The majority of peripheral vascular disorders are part of a generalized disease and therefore a full clinical examination is an essential precursor, with particular emphasis on assessment of the state of the coronary and cerebral arteries, and the exclusion of diabetes and anæmia. The abdomen must be palpated for masses, and the aortic pulsation traced from the epigastrium to the suprapubic region. The extremities lend themselves to physical examination, and the two limbs must be completely exposed and examined together in a warm room. They must be inspected, palpated and auscultated. The physical signs depend on the situation and extent of the block and on the efficiency of the collateral circulation. The higher the block, the better the nutrition of the limb—*e.g.*, the femoral artery has a good collateral circulation, and there may be no abnormality other than absence of ankle pulses, whereas a thrombosed popliteal artery has poor collaterals and there are severe symptoms and signs.

Initially the limb is inspected for trophic changes. The skin may be dry, scaly or glossy, with absence of hairs and reduction of subcutaneous tissue and toe pads. The nails are dry, brittle, grey or brown and often deformed, and do not require cutting. There may be scars, minor infections and areas of skin necrosis. Local swelling is due to lymphatic obstruction (non-pitting), to venous obstruction (pitting), to cardiac or renal disease and to hypoproteinæmia. Stasis pigmentation indicates chronic venous insufficiency. As a result of disuse there may be muscle wasting. If one limb is longer than the other, an arterio-venous fistula must be suspected.

Colour changes may be subjective or objective. Persistent cyanosis, rubor or pallor should be noted. Persistent cyanosis limited to the extremities indicates that the capillaries, venules and veins are filled with excessively deoxygenated blood resulting from venous stasis or slow arterial inflow. This occurs in venous obstruction, acrocyanosis, *livedo reticularis*, Raynaud's phenomenon, and chronic arterial insufficiency. Acrocyanosis is a condition of painless, persistent coldness and cyanosis of the

[1] Based on a paper read at St. Vincent's Hospital Reunion Week on October 3, 1956.

extremities occurring in young women, particularly in winter. It requires only protection from cold and has a good prognosis. *Livedo reticularis* is a similar condition characterized by mottling and blotchy or reticular reddish-blue discoloration of the skin of the legs, feet and arms, particularly on exposure to cold. Persistent cyanosis of a digit suggests thrombosis of a digital artery. Rubor, a dull red or reddish-blue discoloration of the cold extremity, occurs when the cutaneous capillaries and venules are dilated or damaged from anoxæmia, cold or inflammation. It occurs in infection, erythrocyanosis, Raynaud's phenomenon, chronic arterial insufficiency and intracutaneous or subcutaneous hæmorrhage. In the last-mentioned condition the rubor persists on elevation of the limb. Painful rubor in a warm limb occurs in erythromelalgia. Pallor of the extremities in the absence of anæmia indicates impaired arterial flow. If the pallor is conspicuous and persistent, then organic arterial occlusion is likely.

Abnormal alteration of colour with posture is the second most common sign in occlusive arterial disease (Barnett and Fraser, 1953). In interpreting such changes, one must remember that the normal limb undergoes slight colour changes on elevation and dependency. This is best illustrated by clenching the hand eight to ten times above the head and then allowing it to hang down. Changes in the upper limbs are best observed in the palms, and one should note whether any pallor present is generalized or localized. Local changes occur particularly when there is obstruction of the digital arteries. The lower limbs are examined by elevating the feet about 18 inches above heart level. The patient lies on his back with his hips flexed and his fingers locked behind the knees to support his extremities. His feet are then flexed and extended for thirty seconds and the extent and degree of pallor are noted. The limbs are then hung over the side of the bed. Normal colour should return in ten seconds and the veins fill in ten to fifteen seconds. If the circulation is impaired, the colour returns in a patchy manner in forty-five to sixty seconds and is followed by an excessive rubor. The veins fill slowly and become overdistended. Overdistended veins in the limbs are often seen in chronic arterial insufficiency as the patient lies at rest in bed. They disappear if an organic obstruction is relieved or if the collateral circulation is increased by sympathectomy. The temperature of the two limbs and of the same limb at different levels is noted, with due regard to whether the limb has been recently heated, how long it has been exposed and what the room temperature is.

A disturbance of the peripheral pulses is the commonest physical sign (Barnett and Fraser, 1953). The pulses must be compared in the two limbs. The importance of palpation of the abdominal aorta has already been mentioned. The femoral artery is palpated in the groin just below Poupart's ligament. Difficulty in feeling it is usually associated with failure to realize that it is deeper than generally imagined. It will be absent, diminished or delayed in partial or complete block of the aorta, iliac and femoral arteries, and in coarctation of the aorta. The popliteal artery is difficult to feel, particularly in obese people, and is best palpated with the patient recumbent, the knees semiflexed and the examiner feeling for pulsations with the fingertips of both hands, which are supported by the thumbs placed just below the patella (Allen *et alii*, 1955). The *dorsalis pedis* lies between the tendons of the *extensor hallucis longus* and the *extensor digitorum longus* at the proximal end of the groove between the first and second metatarsal bones. It may be displaced one inch laterally, and may be absent in 8% of patients (Allen *et alii*, 1955). The posterior tibial artery lies half-way between the posterior edge of the medial malleolus and the *tendo Achillis*. It is best felt by supporting the heel with the hand corresponding to the limb being examined, slightly dorsiflexing the foot and feeling with the fingers of the opposite hand. In the upper limb all pulses from the internal carotid to the ulnar should be palpated and compared.

Finally, auscultation should be performed over the lower abdominal aorta and the iliac and femoral arteries. A systolic bruit may be heard and felt, and may be increased in intensity and duration by exercise of the foot. It may even become a continuous murmur. This is indicative of partial occlusion of the vessel lumen. One must guard against a false systolic murmur produced by undue pressure on the femoral artery with the examining stethoscope. A continuous murmur may also occur in arterio-venous aneurysm, but is often absent. Hyperæsthesia may be present, and is associated with severe arterial insufficiency or ischæmic neuritis.

When the examination is complete, one should be able to answer the following three questions: (i) Is there clinical evidence of peripheral arterial disease? (ii) What is the clinical syndrome and its prognosis? (iii) Where is the block?

A careful clinical examination provides all the information required to determine treatment, and no further investigations are needed except when a direct attack on the artery is contemplated; in this case arteriography is essential (Messent, 1955). X-ray examination of the limbs may reveal extensive calcification of the large arteries (Mönckeberg's sclerosis). It is of no clinical significance, and does not in itself indicate arterial occlusion. The finding is of no value in determining the presence or absence of arteriosclerosis (Landsbury and Brown, 1934).

There are three clinical syndromes: (i) chronic arterial insufficiency, (ii) acute arterial occlusion, (iii) vasospastic conditions.

Chronic Arterial Insufficiency.

The commonest syndrome is chronic arterial insufficiency, due either to arteriosclerosis or to *thromboangiitis obliterans*. The latter occurs in males, aged under forty years, with a history of migratory phlebitis, chronic arterial insufficiency in the lower limbs, recurrent thrombosis and involvement of the upper limbs. The disease is mainly chronic, episodic and self-limiting in years, but it may be fulminating, non-progressive or present as sudden occlusion of a major vessel. Of those affected, 50% will have some type of amputation, and 20% to 30% will lose a leg (Horton, 1938). The majority of patients with chronic arterial insufficiency have *arteriosclerosis obliterans*. This may be proximal, distal or a combination of both (Boyd, 1950). The former is a generalized arterial disease associated with secondary popliteal or superficial femoral thrombosis. The latter occurs in the small distal arteries, and leads to superficial necrosis or to loss of terminal phalanges of toes. Its distribution is often symmetrical. There is usually no evidence of proximal spread of the occlusive process, and for this reason it carries a better prognosis. Patients with intermittent claudication have a much better outlook than is generally expected. They are in no immediate danger of losing either their limbs from gangrene, or their lives from a cardiac or cerebral catastrophe. The claudication is likely to remain much the same over a period of a few years, although in some cases it may grow a little worse, in others better (Francis and Barnett, 1956).

Chronic arterial insufficiency in the upper limb is due to involvement of the subclavian artery or digital vessels. It is associated with Raynaud's disease, abnormality of the thoracic inlet, *thromboangiitis obliterans* and thrombosis of the subclavian artery.

Acute Arterial Occlusion.

Acute arterial occlusion is due to embolism or thrombosis. The heart is the chief source of emboli, and the embolus is usually a detached thrombosis from a fibrillating auricle or a myocardial infarct. Thrombosis may be the first manifestation of arterial disease, or it may occur as a later complication. A cold, white, pulseless limb results. Its survival may appear unlikely; yet next day pulses have often returned, and the eventual disability may be surprisingly small.

Vasospastic Conditions.

Diseases of the vasospastic group occur most commonly in the upper limb. They include acrocyanosis, erythromelalgia, Raynaud's disease and secondary Raynaud's phenomenon. The last-mentioned includes occlusive vascular disease, an acquired local fault as in the vibrating tool syndrome, scleroderma, rheumatoid arthritis, cervical rib, the *scalenus anticus* syndrome, and a syndrome peculiar to middle-aged women (Jepson, 1951).

In assessing any treatment, it is important to understand that the natural course of these diseases is marked by remissions and exacerbations. The relative plethora of therapeutic procedures reflects their unsatisfactory state, and the assessment of any procedure is dogged by the difficulties of measuring and comparing physiological and clinical improvement. The ideal treatment in most cases would be to prevent atheroma and to bypass a block of a large proximal vessel. At present only the latter is possible. There are no curative measures for this group of diseases, and treatment is directed at minimizing the effects. It is essential that all treatment be undertaken in close collaboration with a surgeon.

Conservative Management.

The conservative management consists of the following measures.

Smoking.

All smoking must be strictly forbidden. "You can have your tobacco or your extremities—not both" (Allen *et alii*, 1955).

Heat.

The patient must keep warm, and his extremities should be particularly well covered, especially in a cold climate. Thick gloves and socks are essentials. The judicious use of alcohol, one and a half ounces of whisky or brandy three times a day, is useful, but addiction must be avoided. These patients are hyposensitive to external heat, and the local application of heat by raising tissue metabolism may aggravate or precipitate tissue necrosis (Le Fevre, 1951). They must be warned of the danger of hot-water bottles, electric blankets and sunburn, and of sitting close to radiators and fires.

Bed Rest.

Bed rest is of no use to the patient with intermittent claudication. He must be warned to avoid prolonged standing, as venous stasis and œdema are an added circulatory strain. At week-ends, rest with the leg in the horizontal position is advantageous. Bed rest is essential for those with recent thrombosis or emboli and for those in whom infection is present.

Care of the Feet.

Care of the feet is vital, and all patients should be fully instructed in its importance. The skin should be kept dry and a talc dusting powder used daily. Cleanlines is essential, and the skin may be kept soft by the daily inunction of lanoline. Fungous infections are common precursors of extensive deep infections and gangrene (Samuels, 1950). All such conditions should be treated early with an ointment containing undecylenic acid. Nails must be carefully trimmed, cut horizontally, and any suggestion of ingrown toenails should be treated by packing cotton-wool under the corner of the nail (Allen *et alii*, 1955). Loose skin tags, sloughs and dead skin should be gently removed with scissors, and warm saline pads and dry dressings or *tulle gras* employed. Properly fitting shoes are essential. The patient must avoid elevating the limb, and any suspicion of infection is an urgent indication for medical advice.

Diet.

A reducing diet is advisable for obese patients for the usual reasons, and also because obesity throws an additional load on the extremities. All diabetics will have a dietary regime as part of their general management. In any patient with a raised serum cholesterol level, a diet of low fat and low cholesterol content is useful.

Anticoagulants.

Anticoagulants are indicated after a recent acute episode and for the patient with repeated thrombotic incidents. It is probably wise to continue therapy for at least some months. Robb (1956) uses long-term therapy, keeping the prothrombin time twice the control time. The value of this measure is still unproved.

Drugs.

"Priscol" is most useful in the treatment of patients with Raynaud's phenomenon (Douthwaite and Finnegan, 1950). Goodwin (1952) concluded that it was of some value in the long-term treatment of occlusive disease. Side effects such as dizziness, headaches, palpitations, goose flesh and gastro-intestinal upsets are common. It is disappointing in the organic disorders. "Hydergine", "Ronicol" and methonium compounds occupy a similar position, as all produce a generalized vasodilatation which will be maximal in the least-involved vessels. Papaverine is very useful for intraarterial injection in acute arterial occlusion, producing striking dilatation of collateral vessels. Middle-aged patients with menopausal Raynaud's phenomenon may derive benefit from œstrogens (Jepson, 1951). Erythromelalgia is often relieved with 10 grains of aspirin or with adrenaline given by inhalation.

Contrast Baths.

Contrast baths are potentially dangerous, but are occasionally useful for the patient with mild Raynaud's disease.

Postural Exercises.

There is not the slightest physiological evidence that Buerger's exercises improve the circulation, and recent studies with radio-active iodine confirm this (Wisham *et alii*, 1953). The only use of this procedure is to remind the patient that he has an impaired circulation and to encourage him to take better care of his extremities.

Intermittent Claudication.

The various forms of treatment adopted for intermittent claudication—vasodilator drugs, postural exercises, anti-coagulants, sympathectomy—are on the whole of no value (Hamilton and Wilson, 1952; Francis and Barnett, 1956). Restoration of the main channel is indicated if there is a block of a major vessel. Sympathectomy is indicated only if there are ischæmic skin changes, although occasionally it alters the character of the pain in uncomplicated claudication. Bed rest with the exhibition of anticoagulants is useful for the patient with recent onset of claudication. It is important to realize that 50% of patients will not grow worse, 25% will grow worse and 25% will improve. There is little or no danger to life. Tenotomy of the *tendo Achillis* may help those with good nutrition of the toes and feet; but it leaves the patient with a shuffling gait, and it is not long before his claudication returns in the anterior tibial group of muscles.

Sympathectomy.

Sympathectomy is indicated for those patients with chronic arterial insufficiency who have severe symptoms, who are aged under sixty years, who are without severe hypertension or coronary artery disease, who have not had a recent thrombotic episode, who have not peripheral œdema or gangrene (particularly extending to more than one toe), and who do not have severe pain, as this indicates imminent gangrene. In the "poor risk" patient, destruction of the sympathetic with 10% phenol solution is an alternative to the risk of operation.

In Raynaud's disease and Raynaud's phenomenon, the results are variable and often temporary. The best results are obtained in the mild, non-progressive idiopathic cases and in those due to occlusive arterial disease. The failures occur in the severe idiopathic cases, in the cases of marked "local fault", and in those in which progressive lesions are present (Jepson, 1951). The operation should therefore not be undertaken lightly.

Diabetes.

It is important to realize that lesions of the feet in diabetics are of four types: (i) septic, (ii) neuropathic, (iii) ischæmic, (iv) combinations of (i), (ii) and (iii). When the lesion is the result of neuropathy and there is an adequate blood supply to the foot, local surgical measures give excellent results. However, when there is occlusive vascular disease the prognosis is poor; local surgery leads to chronic ulceration and more radical surgery is required (Oakley *et alii*, 1956).

Acute Arterial Insufficiency.

In acute arterial insufficiency bed rest is essential. The limb is exposed to the air and placed in the horizontal position, and the body is warmed with blankets and hot-water bottles to induce dilatation of the peripheral vessels in the affected limb. The administration of anticoagulants is commenced, and if the artery is accessible, two cubic centimetres of papaverine or 25 milligrammes of "Priscol" are injected intraarterially. It is usually difficult to repeat this procedure, as one often produces a hæmatoma with the first injection and even more often at the second attempt, since by this time the heparin is active. Pain should be relieved, and pethidine and "Omnopon" are probably better than morphine, as the last-mentioned tends to increase spasm of plain muscle (Goodwin, 1952). A surgical opinion should be obtained as soon as possible, and if there is no improvement in six hours, embolectomy or immediate grafting may be indicated.

Conclusion.

In conclusion, patients with peripheral vascular disease present an ever-increasing problem that must be dealt with by physicians and surgeons who have in mind the words of Sir Astley Cooper: "He is a good surgeon who can amputate a limb but he is a better surgeon who can save a limb."

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THE DIRECT DETERMINATION OF CALCIUM IN BIOLOGICAL MATERIAL

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PROCEDURES for the direct determination of calcium in serum by spectrophotometric titration with the disodium salt of ethylenediaminetetraacetic acid (EDTA), using ammonium purpurate (murexide) as indicator, have been developed by Fales (1953), and by Kibrick, Ross and Rogers (1952). The procedure of Fales is the more accurate, but is tedious.

The use of these procedures for the direct determination of calcium in specimens of high phosphate content, such as urine, fæces, diets, bone *etc.*, is limited owing to the interference produced by phosphate ion.

Horner (1955) has determined calcium directly by first removing the interfering ion with sodium tungstate and morpholine nitrate, and then following a modification of Fales's method. The phosphate can also be removed with ion exchange resins (Jenness, 1953).

By suitably modifying Fales's procedure, Kenny and Toverud (1954) have found that there is no interference by phosphate, even when the phosphorus: calcium ratio is as high as 8:1. These authors attribute the absence of interference by phosphate to the fact that the ion products are well below the solubility product of calcium diphosphate ($CaHPO_4$).

The method described here overcomes the tediousness of Fales's procedure, and minimizes the need for removal of phosphate in the analyses of specimens of high phosphate content. It is rapid and accurate and requires only standard equipment.

Materials and Methods.

All reagents used were of analytical grade, and all solutions were prepared with distilled water which contained negligible amounts of calcium. The materials were as follows: (i) disodium salt of ethylenediaminetetraacetic acid (0·01 M); (ii) sodium hydroxide (4N); (iii) ammonium purpurate indicator solution (0·045 gramme dissolved in 250 millilitres of water); (iv) standard calcium solution, 10 milligrammes of calcium per 100 millilitres, prepared by dissolving calcium carbonate in the calculated quantity of hydrochloric acid; (v) standard phosphate solutions: (*a*) 100 milligrammes of phosphate (as PO_4) per 100 millilitres—*i.e.*, 32·6 milligrammes of phosphorus per 100 millilitres; (*b*) 10 milligrammes of phosphate (as PO_4) per 100 millilitres—*i.e.*, 3·26 milligrammes of phosphorus per 100 millilitres; (vi) Hilger "Spekker" Photoelectric Absorptiometer, Model No. H454 (the commercial photoelectric colorimeters most widely used in Australian clinical laboratories would also be suitable); (vii) a micrometer syringe burette (0·5 millilitre capacity), used for the addition of EDTA solution; stirring was carried out manually.

Procedure.

The procedure is as follows:

Aliquots, containing between 20 and 200 microgrammes of calcium, are diluted to 7·0 millilitres with distilled water; 0·8 millilitre of indicator and 0·2 millilitre of 4N sodium hydroxide solution are added.

The contents of the cuvette are mixed and read in the absorptiometer against a blank (1·0 millilitre of indicator, 0·2 millilitre of 4N sodium hydroxide, diluted to 8·0 millilitres), using "Ilford" spectrum filters No. 607 with H503 heat-absorbing filters (maximum transmittance at wave-length 600 millimicrons).

Titration is performed without delay. After an initial addition of half the expected titration (determined in rough trial titration), a plot, as recommended by Fales, is traced of the absorbance increments produced by the addition of 0·005 millilitre or 0·01 millilitre portions of EDTA. The titration is considered complete when there is no further change in the absorbance.

The exact equivalence of the EDTA solution is previously determined by titration against the standard calcium solution.

The time taken to complete a titration is approximately three minutes.

The following specific instructions are recommended for calcium determinations on biological material.

Serum.—A 0·5 millilitre aliquot of serum is suitable. There is no need to deproteinize the serum.

Urine.—Twenty millilitres of urine are diluted to 100 millilitres and 1·0 millilitre or 2·0 millilitre aliquots of this diluted solution are taken for analysis.

Specimens Containing a High Percentage of Organic Material.—A specimen containing about one milligramme of calcium is dry-ashed, and the ash is dissolved in a small quantity of dilute nitric acid. This solution is then diluted to 25 millilitres. A 1·0 millilitre aliquot of this diluted solution is neutralized with sodium hydroxide before proceeding with the analysis.

Results and Discussion.

Calcium has been determined directly in the presence of varying amounts of phosphate. As shown in Tables I and II, on analysis of aliquots of these samples for calcium by the present method, no evidence of interference by phosphate was shown, except in the case in which the [Ca]×[P] product was 9·6.

TABLE I.

Comparison of Direct Titration with Titration After the Removal of Phosphate.

Sample.	Phosphorus (as P).[1] (Milligrammes per 100 Millilitres.)	Calcium. (Milligrammes per 100 Millilitres.)	
		Direct Titration.	Phosphate Free.[4]
Inorganic material	4·6	5·07	5·11
	9·2	4·97	5·00
Urine	10·1	5·88	5·80
	6·29	6·27	6·24
	5·36	8·82	8·71
Cheese[2]	—[3]	2·40	2·44
	—[3]	2·68	2·60
	—[3]	2·80	2·81
Bone[2]	1·76	3·64	3·62
	2·16	4·00	4·04

[1] Phosphate determined by the method of Whelan and Bailey (1954).

[2] Cheese and bone were dry-ashed at 950° C., and the ash was dissolved in nitric acid.

[3] These values were not determined, owing to interference by nitrate with the analytical procedure used.

[4] Phosphate removed by the method of Horner (1955).

TABLE II.

Effect of Phosphate on the Analysis for Calcium by EDTA.

Phosphorus Present (as P). (Milligrammes per 100 Millilitres.)	Calcium Theory. (Milligrammes per 100 Millilitres.)	Calcium Found. (Milligrammes per 100 Millilitres.)	[Ca]×[P][1] in Solution Titrated.
0·61	5·00	4·93	0·05
1·53	5·00	5·07	0·12
6·13	5·00	4·93	0·48
15·3	5·00	4·93	1·2
30·7	5·00	5·11	2·4
61·3	5·00	5·15	4·8
23·0	10·0	9·82	3·6
61·3	10·0	<8·0	9·6

[1] [Ca] and [P] expressed as milligrammes per 100 millilitres in solution titrated.

Interference by phosphate, as noted by other authors, appears to be twofold in nature.

Firstly, as can be seen from Table III, there is a marked decrease in titratable calcium if the sample is allowed to stand at pH 12 for any length of time. The sample with the higher phosphate concentration gives the greater error. This decrease in titratable calcium is probably due to the slow precipitation of calcium by phosphate in the alkaline solution. This interference has been overcome by titrating immediately, and reducing the time of titration to a minimum.

TABLE III.

Effect of the Delaying of the Titration.

Sample.	Phosphorus (as P). (Milligrammes per 100 Millilitres.)	Calcium Found: Direct Titration. (Milligrammes per 100 Millilitres.)	Calcium Found: Titration after 10 Minutes at pH 12. (Milligrammes per 100 Millilitres.)	Calcium Found: Titration after 20 Minutes at pH 12. (Milligrammes per 100 Millilitres.)
Inorganic material	—	5·00	—	4·93
Inorganic material	1·07	4·97	—	4·73
Inorganic material	3·07	4·97	—	4·39
Inorganic material	12·3	5·03	—	1·73
Inorganic material	6·13	4·93	4·74	—
Inorganic material	15·4	4·93	4·59	—
Urine	5·86	8·82	8·39	8·08
Urine	10·1	5·88	5·22	4·39

Secondly, the colour change of the indicator is inhibited by phosphate, there being very little colour change with high phosphate concentrations (Table IV). This interference can be remedied only by removal of the phosphate ion.

TABLE IV.

Effect of Phosphate on Absorptiometer Readings.

Calcium Present. (Milligrammes per 100 Millilitres.)	Phosphorus (as P) Present. (Milligrammes per 100 Millilitres.)	Absorptiometer Reading.[1]
5·0	—	0·248
5·0	15·3	0·149
5·0	23·0	0·129
5·0	30·7	0·090

[1] Solutions were compared in the absorptiometer against a blank.

Under the conditions of this calcium determination, no interference occurred when the [Ca]×[P] product was less than 5·0 (Table II). Calculations made from the results of Horner (1955) indicate that phosphate interference occurs when the [Ca]×[P] product exceeds 6·2. Similar calculations from the results of Kenny and Toverud (1954) indicate that no interference occurs with values up to 4·2. While the significance of this product is not clear, it may be of some value in deciding when phosphate interference is likely to occur.

The recovery of calcium added to urine, serum, cheese and bone is shown in Table V.

TABLE V.

Recovery of Added Calcium.

Sample.	Calcium Present. (Milligrammes per 100 Millilitres.)	Calcium Added. (Milligrammes per 100 Millilitres.)	Total Calcium Present. (Milligrammes per 100 Millilitres.)	Total Calcium Recovered (Milligrammes per 100 Millilitres.)
Urine ..	1·13	2·00	3·13	3·17
	1·13	1·00	2·13	2·18
	2·26	3·00	5·26	5·26
	2·26	2·00	4·26	4·28
Serum[1] ..	6·75	2·00	8·75	8·78
	6·75	8·00	14·62	14·75
	3·38	4·00	7·38	7·53
	13·50	4·00	17·50	17·50
Cheese ..	2·40	4·00	6·40	6·32
	2·68	2·00	4·68	4·72
	2·80	2·00	4·89	4·80
	2·80	4·00	6·80	6·72
Bone ..	3·64	2·00	5·64	5·72
	3·64	4·00	7·64	7·32
	4·00	2·00	6·00	6·04
	4·00	4·00	8·00	7·77

[1] Recalcified serum (33·8 milligrammes of calcium per 100 millilitres) diluted to desired volume.

The fading of the indicator has been adequately controlled with a blank. The indicator concentration in the blank is greater than that in the solution under analysis. This has been done to compensate for the fading that would occur while the final colour of the indicator was being developed (in the test solution), and to ensure that the absorptiometer reading at the conclusion of the titration is greater than zero.

The rate of fading of the indicator increases with increasing temperature (Table VI). It is therefore advisable to carry out the titration at temperatures below 30° C.

TABLE VI.

Effect of Temperature on Rate of Fading of Indicator.

Temperature. (Degrees Centigrade.)	Absorptiometer Reading After					
	0 Minutes.	2 Minutes.	5 Minutes.	10 Minutes.	15 Minutes.	20 Minutes.
65	0·18	0·12	0·07	0·04	0·03	0·03
35	0·22	0·20	0·19	0·16	0·14	0·13
30	0·20	0·19	0·18	0·16	0·14	0·13
25	0·22	0·21	0·20	0·19	0·18	0·17

Summary.

A modification of Fales's procedure for the direct determination of calcium is presented (range 20 to 200 microgrammes of calcium).

Biological material of medium or high phosphate content can be analysed without the prior removal of phosphate.

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THE MOLE TECHNIQUE FOR DILATATION OF ŒSOPHAGEAL STRICTURES.

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THIS paper deals with a technique for dilating established strictures of the œsophagus, which is considered to be a useful addition to the methods of treatment of strictures. The method is that of Negus and Harvey (1951), who described a technique of drawing plastic dilators, or "moles" as they called them, down through the œsophagus and out of a gastrostomy opening. The thread fastened to the dilator was attached to an elastic traction apparatus fastened to the lower part of the abdomen; thus a continuous pull was exerted on the dilator.

Over the last three years, at the Princess Margaret Hospital for Children, five patients have been treated; in four of the cases the stricture was due to corrosive burns, and in one it was a complication of an hiatus hernia. The gastrostomies have been closed in two of the burns cases and also in the hiatus hernia case (after successful reduction of the hernia). The other two patients are still undergoing routine dilatation. Other methods of dilatation and their indications will not be discussed, but special pædiatric factors will be mentioned.

Special Pædiatric Factors.

Oral Bouginage.

Small children must be considered in a different category from adults and older children, for frequent oral bouginage can rarely be performed on them. The alternatives are the use of the indwelling tube (Leegard, 1945; Barr *et alii*, 1954), or dilatation using a gastrostomy (retrograde Tucker bougies, or the "mole" oral technique).

Size of Lumen of Œsophagus.

As a fibrous stricture will not dilate with the normal growth of the child, it is important to dilate a stricture to as great a lumen as possible. This will be the normal maximum diameter for its age. An obstructed œsophagus will slowly dilate to a large size, but there is a normal slow increase in diameter with growth. It is usually taken that at least a lumen of a number 30 French bougie (10 millimetres) on dilatation should be aimed at in children, and a size of a number 40 French bougie (13·3 millimetres) in adults. It is thought that, if a larger lumen than this could be obtained, less trouble would occur later. As no calibration of the size of the lumen could be found in any text-book or journal available, an investigation was carried out to ascertain the normal range of sizes of the œsophagus. This was performed by testing post-mortem specimens (at the post-mortem examination) with Hagar uterine dilators. A definite end point was found at which considerable resistance was felt, while the dilator of the preceding size slipped in readily, and this was taken as the normal size of that œsophagus. The post-cricoid narrowing was well demonstrated. The lumen increased by about one millimetre a year, from 10 to 12 millimetres at birth, to 16 to 18 millimetres at the age of five years, and then quite slowly to the adult size of 21 to 26 millimetres. This is summarized in Table I.

The overall size of the person often has only a small bearing on the size of the œsophageal lumen; thus, at times, a small person may have a relatively large œsophageal lumen and vice versa.

The Apparatus.

The Moles.

The dilators (Figure I), which have been modified from Negus, are cone-shaped instead of pear-shaped, and are made of acrylic with a stainless-steel marker incorporated. The acrylic produces a very smooth, highly polished surface, and enables them to slip readily into the œsophagus. The marker enables the position to be demonstrated by X-ray examination (Figure II) or by fluoroscopic screening. The sizes used range from 20 to 50 millimetres in length, and from 10·5 to 18 millimetres in diameter (with about one millimetre difference between sizes). They are hollow, with lumina ranging from 3·5 to 5·0 millimetres. Two small holes are made at the narrow end for the traction threads. The short dilators are used for high post-cricoid strictures.

TABLE I.

Showing Increase of Size of Lumen of Œsophagus with Age.

Age.	Post-Cricoid Lumen. (Millimetres.)	Main Lumen. (Millimetres.)
Birth	10 to 12	13 to 14
1 to 2 years ..	12 to 14	15 to 17
4 to 5 years ..	16 to 18	18 to 20
Adult ..	21 to 26	23 to 26

The Gastrostomy Plugs.

To prevent abrasion of the gastrostomy opening and to allow free movement of the thread through the gastrostomy on body movement, the thread is passed through a hollow plastic plug (Figure III). Each plug is about 2·5 to 3·0 centimetres long and about 12 to 14 millimetres wide, and

FIGURE I.

The dilators or "moles". Grooves are made in the larger end for recognition of the sizes. Note the stainless steel marker.

is attached at a slight angle to a disc about four or five centimetres wide. Metal arches are incorporated in the disc. The plug is held in place by tapes around the abdomen which are attached to the arches. A layer of gauze beneath the disc is usually sufficient to protect the skin of the abdomen from any leakage of gastric contents. The lumen is about five or six millimetres in diameter, and enables gastrostomy feedings to be given via a catheter with the thread in place. A cone of sponge rubber reinforced by a central piece of copper wire is used to plug the lumen (Figure IV). This prevents leakage, and enables the thread to move in and out without hindrance. An abdominal binder is also applied.

A solid plug about four centimetres long, attached to a disc about three centimetres wide, is used between dilatations to close the gastrostomy opening.

The Traction.

The thickened wrist bands of surgical gloves are very suitable for providing traction. Owing to the small size of the lower part of the abdomen in children, it is difficult to use a sufficient length of rubber to produce continuous traction. The rubber was first of all attached to the pubis by adhesive strapping, but now is attached to a canvas

harness (Figure IV). The harness has restraining bands around the thighs and also over the shoulders to prevent it from slipping.

The Technique.

Method of Insertion.

First, a cotton thread is passed — three or four feet of black cotton with a small piece of lead attached to one end. (At times, œsophagoscopy and retrograde œsophagoscopy may be required for the initial passage of the cotton.) The

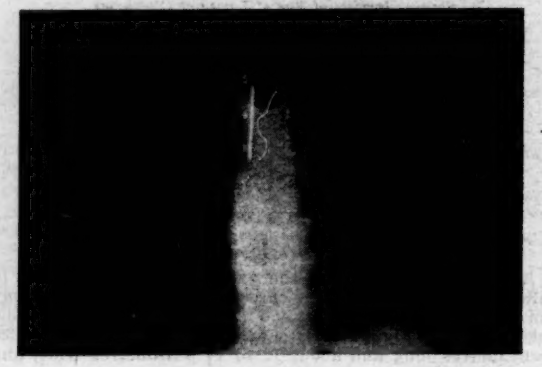

FIGURE II.
X-ray film demonstrating the position of a mole dilator.

lead end is put into the nose of the child, who is then asked to sniff, and the lead falls down the back of the throat. An ice-cream or drink is then given, and the cotton soon passes into the stomach. (The child is less likely to vomit the cotton if it is passed nasally.) It is important to know the length of the cotton, and to be certain that sufficient has

FIGURE III.
Gastrostomy plugs, showing the hollow and solid types.

been swallowed to reach the duodenum. A period of about twelve hours is allowed to ensure that the cotton is in the correct position in the stomach. Under sedation, the end of the cotton is gently pulled out of the stomach by means of a bent wire hook, blindly inserted through the gastrostomy, and is then held while the upper end is pulled out of the mouth. The wire used is about 16 centimetres long, the tip at one end being bent at a right angle for extracting the cotton from the mouth, while at the other end, it is bent in a small three-quarter circle and is used for extracting the cotton from the stomach. Two pieces of strong linen thread about three feet long are then taken. Each is threaded through one of the two holes at the lower end of the dilator, and the four ends are tied to the upper end of the cotton. These threads must not lie across the lumen, as they may cause obstruction. The cotton and then the threads are pulled out of the abdomen, the threads are passed through the gastrostomy plug, and the dilator is then pulled down onto the stricture. The thread is tied to the rubber band attached to a ring on the canvas harness. The tension is varied as required, but must

FIGURE IV.
Child undergoing dilatation. Note sponge rubber cone held in place by strip of adhesive plaster across the gastrostomy plug. This allows free movement of the thread, but prevents efflux of gastric contents.

be inspected daily by a responsible person in charge of the patient, and tightened as necessary. At times, a female urethroscope with an air bladder attached has been of help in locating the cotton in the stomach.

Timings.

The time taken for a mole to pass has varied from one to twenty-two days. It is considered now that if it takes more than ten days to pass, then too large a dilator has been used. At least seven to ten days should be allowed between dilatations at the beginning, and then the time lengthened later. The size usually should not be increased until the time of passage is constant at about two or three days, although the size may often be increased fairly rapidly till the optimum is reached. The dilatations are continued with the optimum-sized mole for the age of the child, and the interval is lengthened to eight to ten weeks. If the time of passage still remains constant at one to two days, the gastrostomy can usually be closed. A graph (Figure V) showing the sizes and intervals should be kept for each patient, particularly if several patients are under treatment simultaneously. This prevents confusion and enables rapid assessment to be made.

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Nursing, Diet and Psychological Aspect.

The abdomen requires constant attention both at home and in hospital, and the parents must be taught to attend to it. Excoriation readily occurs, is most uncomfortable, and has been treated by the following means: extra packing of gauze under the plug frequently changed, the application of silicone ointment or mercurochrome, and drying of the abdomen by exposure to air and sunlight.

The psychological aspect is very important, for these children are either permanent boarders or frequent visitors to hospital. They must be taught to accept the string, plug and tubes, for they tend to become obsessed by them. The technique has produced very little psychological upset, and the treatment in one case was changed from the use of Tucker retrograde bougies to the "moles", largely because of the psychological aspect of the case.

With the dilator *in situ*, ice-cream, junkets, cereals (in hot milk) and fluids are taken without trouble. The remainder of the diet—steak, chops, vegetables, eggs, cheese, extra vitamins, iron, *etc.*—is reduced to a fine homogeneous pulp in an electric "vitamizer" machine—*i.e.*, "vitamized". The "vitamized" food is not very palatable, and because of this, usually has to be given via a catheter through the gastrostomy plug. A typical day's diet is as follows: 6 a.m., eight ounces of milk, cereals and milk; 10 a.m., eight ounces of strained soup; 12 midday, six ounces of "vitamized" food (per gastrostomy); 2 p.m., six ounces of orange juice; 4 p.m., six ounces of "vitamized" food (per gastrostomy); 6 p.m., six ounces of milk. As normal a diet as possible is taken between dilatations.

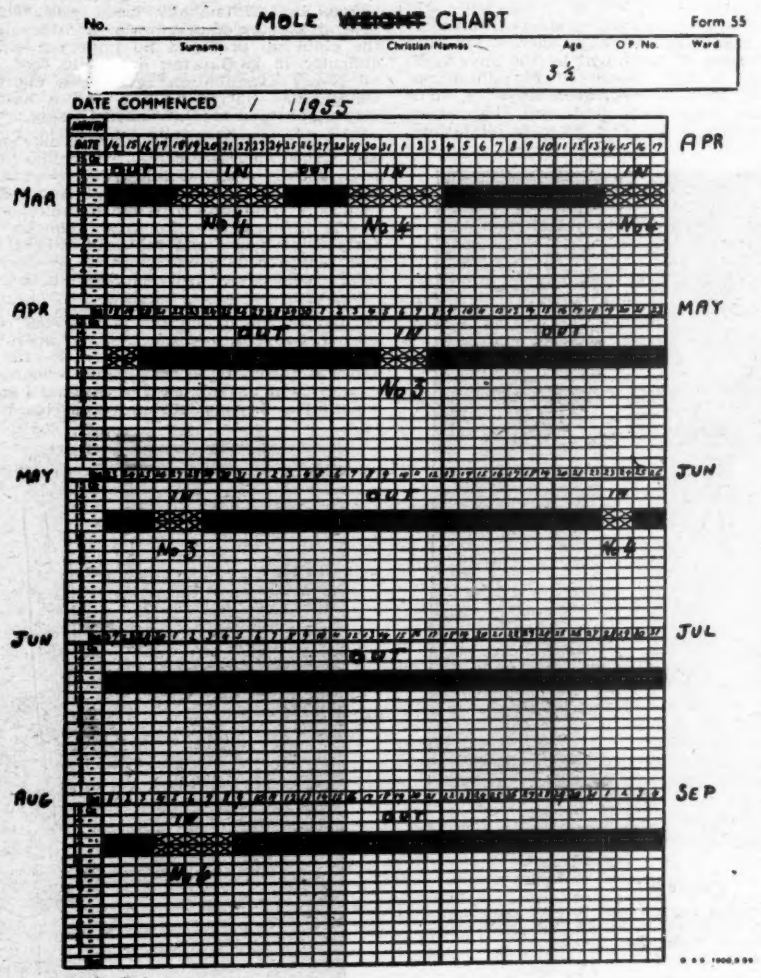

FIGURE V.

Graph demonstrating course of a patient over six months.

Complications.

1. Excoriation of the abdomen readily occurs as with any gastrostomy, but is prevented by assiduous attention to the abdomen.

2. Dilatation of the gastrostomy opening with prolapse of the gastric mucosa may occur. This is relieved by leaving out the plug for one or two days, when the gastrostomy will rapidly close in.

3. Gastric irritation may occur, with a liability to vomiting.

4. Necrosis of the œsophageal wall occurred to a small degree only once in a patient with a very high stricture, but caused no concern. If it occurs, the œsophagus should be rested by using an indwelling nasal polythene tube for ten days.

harness (Figure IV). The harness has restraining bands around the thighs and also over the shoulders to prevent it from slipping.

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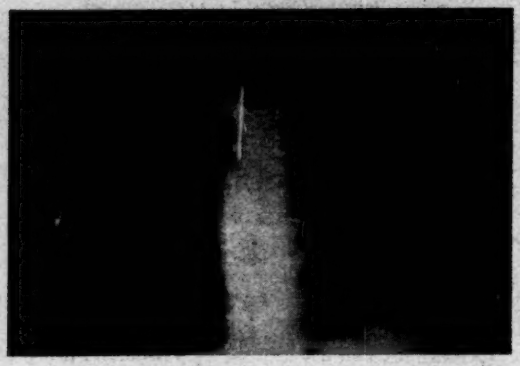

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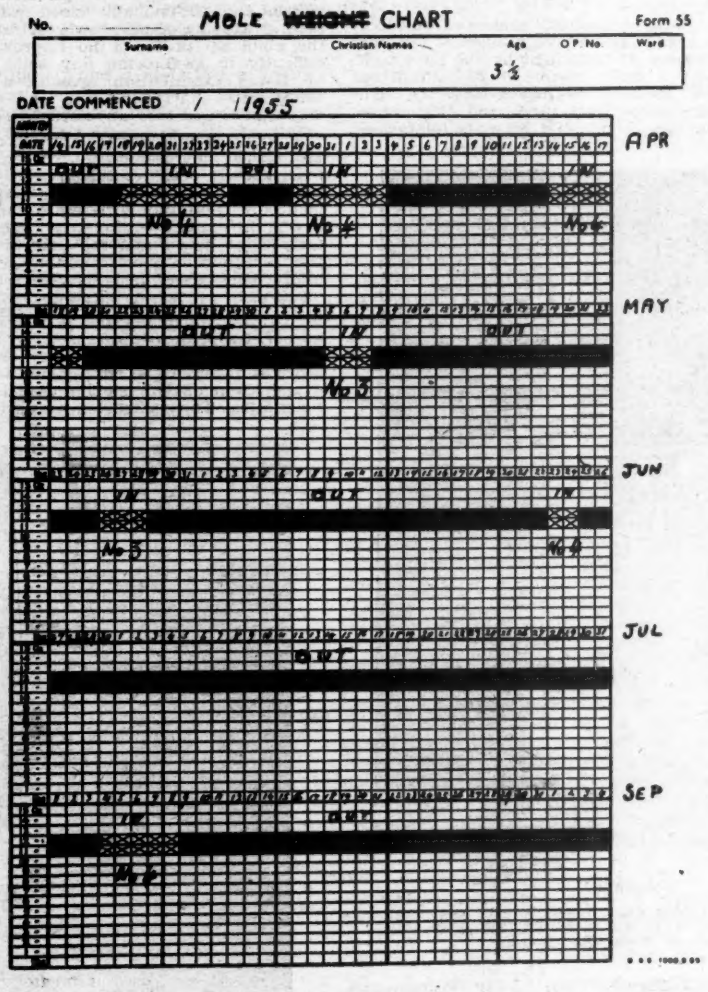

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Reports of Cases.

CASE I.—A. was admitted to hospital on May 26, 1953, at the age of one year and eleven months; he had swallowed caustic soda one month previously. X-ray examination with a barium bolus and œsophagoscopy revealed a stricture one inch above the bifurcation of the trachea. He was treated by weekly dilatations with œsophagoscopy, but this treatment failed, and gastrostomy was performed on April 19, 1954.

On September 9 an X-ray examination showed considerable dilatation of the œsophagus above a narrow stricture (Figure VI). On September 27 treatment by the mole technique was started, and a mole dilator of 13 millimetres' diameter was inserted, which took fifteen days to come through. Larger moles were then used, and the patient rapidly became able to take a full diet between dilatations.

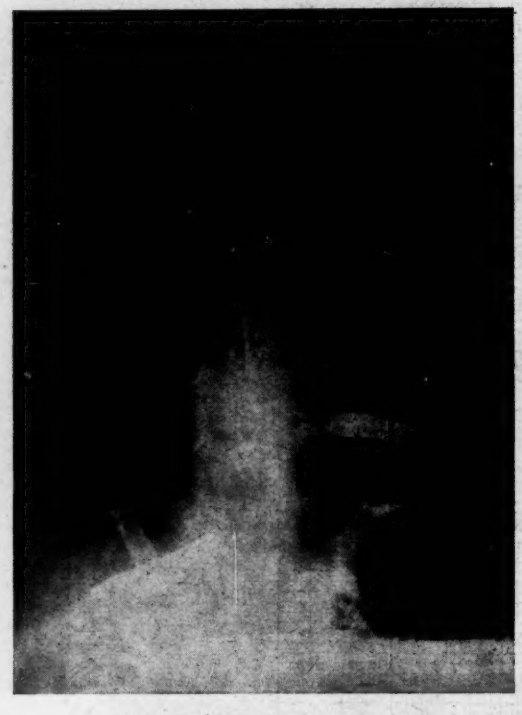

FIGURE VI.

X-ray film demonstrating narrow stricture of œsophagus and marked dilatation above it before the commencement of mole dilatation.

On February 3, 1955 (Figure VII), X-ray examination revealed no evidence of the stricture, and no dilatation of the œsophagus.

From July, 1955, dilatation was carried out about every ten weeks by means of the 18 millimetre mole, which always passed in twenty-four to forty-eight hours. The gastrostomy was closed on February 17, 1956. He is attending for follow-up dilatation by mercury bougies or œsophagoscopy every six to ten weeks.

CASE II.—B., aged two years and one month, was admitted to hospital on August 16, 1954; he had swallowed caustic soda one month previously. X-ray examination with a barium bolus and œsophagoscopy revealed two strictures, one at the upper third and the other in the mid-œsophagus.

On August 27 gastrostomy was performed and retrograde Tucker bouginage was commenced, at first bi-weekly and then weekly. By March 5, 1955, a number 24 (eight millimetres) bougie was being used. It was decided, partly because of the child's bad psychological reaction to retrograde bouginage, and partly because of the good results of the mole technique in Case I, to start dilatation with moles. He has progressed very well, and since October, 1955, his œsophagus has been dilated about every ten weeks with an 18 millimetre dilator. His gastrostomy was allowed to close in August, 1956, simply by removing the plug.

CASE III.—C., aged two weeks, was admitted to hospital on April 7, 1954, with a history of vomiting since the age of two days. Rammstedt's operation for pyloric stenosis was performed on April 11. There was moderate improvement, but vomiting continued until the child was aged four months, and then decreased temporarily with the introduction of solid foods. From five and a half months the vomiting became worse, and occasionally blood was vomited. There were several attacks of overflow respiratory involvement. Sitting the child up produced no improvement, and soon he had difficulty in swallowing any solid food. On November 23 an X-ray examination revealed a dilated œsophagus with considerable narrowing one and a half inches above the diaphragm, and also an hiatus hernia.

A gastrostomy for feeding became necessary, and was established on December 10. The child then took "vitamized" food, usually orally, occasionally by gastrostomy, but gained weight. On September 6, 1955, mole dilatation was commenced. Dilatation progressed rapidly, and in two months a dilator of 17·6 millimetres' diameter passed through in forty-eight hours, and the time interval between dilatations was lengthened to one month. By May, 1956, an 18 millimetre mole passed in twenty-four hours.

On April 27, 1956, a transthoracic operation was performed by Dr. B. Nairn and the hernia was reduced. There was no peri-œsophageal fibrosis. After operation, a 15 millimetre mole was inserted every three or four weeks and passed straight through the œsophagus without holdup. An X-ray examination on August 9 revealed no sign of stricture and no reflux. The gastrostomy was closed in September, 1956.

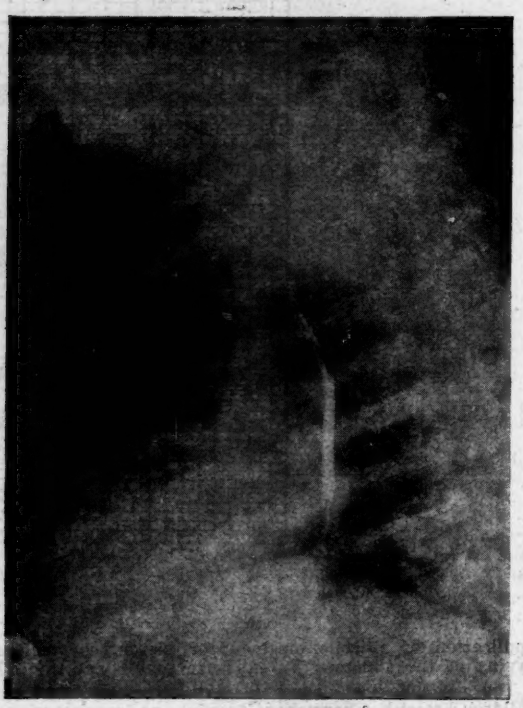

FIGURE VII.

X-ray film taken four and a half months after commencement of dilatation, showing no evidence of stricture or any œsophageal dilatation.

Discussion.

1. To produce permanent dilatation of a fibrous stricture, the dilating force should act for as long a time as possible, should be gentle and should not cause undue tissue reaction, which would produce further fibrosis. The mole technique accomplishes this — the dilatation is gentle and slow, but a large diameter is achieved. In the three completed cases, the children all finished with an 18 millimetre

mole readily passing in twenty-four hours. Further experience may show that the technique will enable the gastrostomy to be closed earlier than the usual eighteen months or more. In spite of the fact that mole dilatation has not been commenced in any of the cases until at least six months after the onset of symptoms, in the three completed cases the gastrostomies were closed twelve, seventeen and seventeen months respectively after commencement of the mole dilatation.

With a narrow gastrostomy opening, difficulty may occur in extracting a mole, and a short anæsthetic may be necessary.

This is a very safe method. When a stricture is being dilated with bougies, there is a real danger of their causing damage, and with general anæsthesia there is only a comparatively short time available for dilatation. In the mole technique, the moles keep to the middle of the lumen of the œsophagus, and the dilating force gently stretches the fibrous tissue. The psychological problems are small. The children are comfortable, and move around the ward.

2. Œsophagitis, particularly if granulations are present, is best treated by inserting an indwelling polythene tube six or seven millimetres in diameter via the nose into the stomach. The polythene type of material is non-irritating and causes no local reaction. The tube should pass the cardia, otherwise œsophagitis may occur from stagnation of food in the lower part of the œsophagus. All foods must be given by tube. The tube is replaced about every twelve days as recommended by Barr *et alii* (1954), and after three or four weeks the irritation has usually subsided. There is no doubt that œsophageal granulations are aggravated by retained food particles. A length of cotton should not be left down the œsophagus, as it rapidly becomes encrusted with infected debris which acts as an irritant, aggravating any œsophagitis. No difficulty has been experienced in passing and extracting the cotton on each occasion.

3. In hiatus hernia, the passage of the mole both dilates the stricture and tends to reduce the hernia. The case presented demonstrates that an advanced stricture can be dilated and kept dilated, and that dilation can then be followed by simple surgical reduction of the hernia instead of by more complicated surgical procedures.

4. This technique is efficient for single or multiple, short or long strictures. It is not confined to any age group, but it is particularly useful in the treatment of the small child. It should give quicker results if it is used as soon as the stricture is diagnosed.

Summary.

1. The mole technique is described for dilating strictures of the œsophagus, using plastic cone-shaped dilators or moles drawn down the œsophagus and out through a gastrostomy opening. Additional apparatus and some nursing problems are described.

2. The gentleness, safety and efficiency of the technique are stressed.

3. A table showing normal increase in size of the œsophagus with age is presented.

4. Freedom from psychological trauma is stressed.

5. The use of the method in a case of stricture complicating hiatus hernia is described.

6. The use of the indwelling polythene nasal tube rests the œsophagus, and is of particular value in the treatment of œsophageal granulations.

Acknowledgement.

Acknowledgement is made to the staff of the Perth Dental Hospital for their cooperation in constructing all the acrylic apparatus.

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Addendum.

Since this paper was submitted, a baby, aged three months, with a severe stricture at the site of an operation for the repair of a tracheo-œsophageal fistula at the age of two days, has been satisfactorily started on a course of dilatations.

COMMON TRAUMATIC INJURIES.[1]

By J. R. BARBOUR, M.S., F.R.C.S.,
Adelaide.

I AM to speak to you about common traumatic injuries, a title which I must confess I found odd until I recalled the expression in my far-off French studies of "*beaucoup, beaucoup*"; and imagining that this title represents a similar combination of words, I presume that a traumatic injury is something severe. Therefore, "common traumatic injuries" become the common severe injuries, and so the results of road accidents.

I can describe to you conditions and their diagnosis and treatment. You can apply these like parlour tricks; but I do not believe you are so lacking in recognition that we are faced with a problem that goes further back than the broken limb.

Some of you will have received "The Year Book of General Surgery" for 1956-1957. I received mine through the post a short while ago. On the first page a medical man of the United States Army discusses the role of the motor-car in both the military establishment's fatalities and also the nation's. He considers that the motor-car is the greatest killer—that an American is injured every 24 seconds and one is killed every 14 minutes in a traffic accident. With adjustment for male groups of comparable ages, the military service has about 30% more fatalities due to motor accidents than do civilians. These deaths and injuries in road accidents are due to decelerative forces that bring the occupant against solid objects. He discusses the way in which the lethal parts of a car, the doors and framework, may be modified, and also the second solid object, outside the car, may be reduced in effectiveness by restraining the occupant from being ejected. He suggests that possible mechanisms for reducing the danger are: a progressively disintegrating frame on the car; an energy-absorbing construction of various lethal parts of the vehicle, such as steering wheels, instrument panels, windshields and seat backs; a shock-absorbing bumper; padded panels and pop-out windshields. He considers that, if properly "packaged" for survival, a person could crash a car and still live. There follows this editorial comment:

> Are we ever going to do anything decisive about the automobile's propensities for murder and injury? What is the use of getting excited about polio, cancer and other diseases whose toll is much less than that of the automobile? Future generations must certainly look back on this one and wonder how we could permit an agent of death of 200 or more horsepower that can go at 100 m.p.h. to roam our city streets. Is it necessary? Of course not! In most accidents speed is an important factor. If we really cared about the slaughter we would demand that no car be allowed to be sold that would go faster than, say, 50 m.p.h. Think of it—a million injuries a year, many of them permanent.

That, I think, is a fair summary and a reasonable prelude to any discussion of acute trauma.

While I realize that prevention is paramount, meanwhile we have to deal with the results of the accidents. Even so, we are not lone individuals, and an overall scheme of treatment is as important and as essential as the answer

[1] Read at a meeting of the South Australian Branch of the British Medical Association on May 2, 1957.

to the question: "What shall I do now?" We have a State-wide tuberculosis survey, we have a State medical officer for poliomyelitis and the Salk vaccine teams. What is it that makes this greatest killer and crippler so immune from attack? Is it that we have no mind or will that will grapple with this problem?

Enough of that for the present, because it will arise later, and you have come to hear about the problems of common traumatic cases. These are problems which relate to three things—the patient, the place and the time.

Problems Relating to the Patient.

In the first instance we will discuss some of the problems arising in relation to the patient. This will start with a report of an accident, often alarming, and making it necessary for a medical man to go to the scene to assess it. The report may come in that an accident has involved a loaded bus, there are bodies strewn all over the road and the number of dead and injured is high but not assessed. Apparently it is only too often the duty of the medical man on a main road to go instantly to the scene and be confronted with one injured person and a disabled motor bus. But unless he goes, it is impossible to know what has happened.

Perhaps that is more the first-aid assessment of an accident than a problem related to a patient, and the first problem related to the person injured is, what is wrong with him, and how bad is it? This is a question which arises in hospital rather than at the roadside. If you do not recognize that this is a problem, then you cannot have dealt with many cases and submitted a legal report afterwards.

When a casualty is brought in, the essential factors are recognized; for instance, a man is unconscious, has fractures of ribs and a compound fracture of a femur. That is enough to go on. But unless this list of diagnoses is reviewed, so that you do not leave the subluxated neck and the fractured pelvis without note or treatment and that you do not miss a nerve injury, your subsequent showing as a medical man exercising reasonable care will not be very much to your credit. I am the first to suggest that it is only too easy to miss some essential and crippling injuries in the case of the all-too-common multiple injury.

The second part of this question—how bad is it?—is somewhat easier, and I can lay down arbitrary rules as a concrete basis for argument. The man appears shocked and in need of urgent treatment, and this is really urgent when his blood pressure is 80/60 millimetres of mercury or below; I am not particular whether his blood pressure started from a normal of 130/95 or 200/120 millimetres of mercury. Shock is a difficult state, but in my present position I will say that it is a depression of vital function following injury and accompanied by a reduction of circulating blood volume; if this persists, it leads to a tissue anoxia which is the killer. I use this as a definition of shock and will develop it in my suggested scheme of treatment.

The treatment is an urgent expansion of circulating blood volume. You will proceed by first taking samples of blood for grouping and matching, and then expand the circulating blood volume by rapid—and I repeat, rapid—infusion of fluid. The best thing is blood or plasma, but the matching of blood takes an hour, so meanwhile it is necessary to use albumin, pooled serum or "Dextraven"—and I repeat again, it is necessary to pump it in. Unless you give a pint of fluid in five minutes you are wasting time, fluid and a chance of survival. An intravenous drip administration is only a means of keeping a channel open for rapid boosting of the circulating blood volume as required.

During the infusion the blood pressure is checked quarter-hourly, and once it rises to 100 millimetres of mercury, systolic, you can stop pumping and watch to see the subsequent development. During this time there must be free respiration, and it does not add any handicap to give the patient oxygen intranasally. This is one means of combating shock.

Then the question arises, do we know the factors causing it? These are obviously the injuries and the pain caused by these injuries. We can treat the pain by the intravenous administration of morphine; but the injury needs treatment no less, and its treatment should be concomitant with the shock treatment.

There is the traditional statement of "first treat the shock"; that is no idle statement. Treatment of shock is urgent, and once you have obtained a response, immediately proceed to treatment of the factors known to initiate the shock. This will involve the excision and dressing of wounds, the temporary fixation of fractures (whether of the jaw, thorax or limbs), the arrest of hæmorrhage and the closure of ruptured viscera. Only the minimum will be done, and that with the recognition of the probable necessity of repeating the previous infusions. That is, if the patient requires three pints of fluid before operation, he will probably require three pints during it to maintain a reasonable circulating blood volume. Only the surgical essentials will be performed, and thereafter his final or definitive treatment will be carried out after reasonable nutrition has been achieved—*i.e.*, some time after 10 days. That is the time when fractures will be accurately reduced or operated upon, nerves explored, and so on.

With regard to the control of infusions, for an inanimate patient I have suggested forced intravenous infusion of fluid and the continuing of an intravenous drip administration between forced infusions. If this goes on for some hours, the question arises as to when the patient will drown. Control is by two means only, on a simple scale. The first is the hourly measurement of the amount of urine excreted. This is best done by inserting an indwelling catheter and releasing it hourly, and the amount excreted should not exceed two ounces per hour. The second measure is hourly estimation of the hæmoglobin value, which should be kept between 80% and 100%.

If one doctor looks after one patient under these circumstances, he is occupied, and in fact he needs skilled assistance. I would ask you to bear in mind that he needs skilled assistance.

Shock is fundamentally a protective phenomenon, and I do not think we should meddle with it too much. That is, the patient is cold, inert and using full compensation to maintain adequate circulating blood volume. Therefore, do not upset this by applying external warmth and cheerful activity, but simply aid the increase to the circulating blood volume and the oxygenation. Then attack the factors known to cause shock. The peripheral vasoconstriction will shut off any subcutaneous or intramuscular injection, so all drugs used—for example, morphine—must be given intravenously.

This raises the question of the use of morphine. It is a respiratory depressant and masks symptoms of head and abdominal complications; but fear not! Small repeated intravenous doses act for a short time only—that is, about two hours—and I do not believe that they have a material effect on mortality in these conditions. If the patient is restless, sedation is essential, and I feel sure it is less dangerous than permitting the restlessness to continue.

I have said that only the essential minimal procedures should be carried out. What are these? In compound fractures they are excision of the wound within six hours and effective splinting of the bones. They are not closure of the skin, *not concentration on soft parts*; they are the excision of damaged tissue that is or may be contaminated and a nidus for infection, and effective splinting after aseptic or antiseptic wound dressing, with closure of the wound if possible.

These preceding remarks have referred to the initial treatment of a seriously injured man only, and then follows the subsequent course.

What is the plan for the 10 days which I have called 10 days of restoration of nutrition? It is essentially the relief of pain, the obtaining of sleep, the taking of food,

the maintenance of the hæmoglobin value between 80% and 100%, with the parenteral administration of vitamins, mainly *B* group and ascorbic acid, and the continuance of an antibiotic cover. It is not uncommon to be presented with a chronic problem weeks or months after an accident, with a story which commences, "this man's survival was a miracle". That statement probably is true, and almost always, if treatment had been adequate, the survival would have been a miracle assisted by the doctor, and his definitive treatment would have been carried out in 10 to 14 days rather than months later.

Under this heading of problems associated with the patient I have mentioned two main things—firstly, detailed assessment of his injuries, both their nature and also how bad they are. I have observed certain deficiencies in this regard as a result of working at a centre gathering cases of road accidents. Firstly, in assessment, the making of a list of injuries always needs two or three separate reviews. The first examination usually determines the main injuries. The commonest ones missed, which later may give rise to extensive legal claims, are spinal injuries, nerve injuries in the presence of a fracture, and minor but disabling joint injuries, especially affecting the wrist and the hip in pelvic fractures. In this regard I would say that clinical examination is much more important than X-ray pictures of doubtful quality taken in a hurry. Pictures that an expert would hesitate to read are no substitute for good clinical examination, although much more impressive from the patient's point of view.

To give an instance: A motor-car turns over and there are a number of injured. One of the ambulant ones walks about rubbing his neck, which is held a little forwards and to one side, and after being reassured, he can carry out almost a full range of neck movement. Later, when the excitement has died away and he is examined again, someone suddenly realizes that he has a unilateral subluxation of his neck, and this is difficult to correct after a month.

Another instance: A man has concussion and a fracture of the humerus; this is reduced and a splint is applied. When he is mentally clear and walking about, it is suddenly realized that he has wrist-drop from a radial nerve palsy, or even paralysis of the whole limb from a plexus injury.

I must add that the presence of a head injury will lead to the masking of a terrifying range of injuries which are disabling and yet are not readily apparent at the time—vertebral fractures, fractures involving joints such as a scaphoid bone at the wrist or a tibial condyle at the knee, or a pelvic fracture involving the hip joint.

The second main deficiency is in treatment, and it is certainly procrastination. Initially the pressure of ordinary practice is a real distraction; but there seems no reason why a life-giving infusion should drip in and not be forced in so as to expand the circulating blood volume. Once the crisis has passed, the victim becomes "just another patient", and time struggles on single-handed to determine recovery or the necessity for further advice or treatment.

The third deficiency is related to cost—cost of the treatment in time and in money. Any doctor with the responsibilities of practice cannot drop everything for the sake of one person. He may be only too conscious of the need for assistance, but where to get it is quite another thing, and I would ask you to remember this, that he must have assistance at his call.

The cost in money is rather different, and although at the time of injury no questions are asked, even if the doctor gives his service free, the cost for hospital and materials can often be very great and someone must pay. This is a disturbing feature, because a question may arise of the desirability of a consultation or of extensive laboratory investigations or X-ray surveys. But if the medical officer feels that he can probably achieve success by simple means, he is slow to adopt the expensive alternative, although he may feel that perhaps it would help.

Problems Related to Place.

If the accident occurs in Adelaide or its suburbs there is no difficulty—the patients can be referred to the Royal Adelaide Hospital; but suppose the accident occurs two to three hundred miles away—what help has the practitioner? He may need materials, nursing help or professional advice, and we can offer him only the use of a telephone. Occasionally there is a regular air service as an alternative to time-consuming motor transport. We have not as yet assembled even a token service for this patient and his doctor, proud as we are of the Flying Doctor Service outback. I am inclined to think it is safer to be injured well away, where there is a regular, established air medical service, than in the inner zones where no such service exists and only road transport is available. I think perhaps this is sufficient to indicate that there is such a thing as a problem related to place.

Problems Related to Time.

In the initial stage of injury, time is paramount. "The Moving Finger writes; and, having writ, Moves on . . . ." The occasion is not one of our making or choice; but once it has been thrust upon us, we are its servant. A shock state must be treated, and at the first opportunity all wounds should be excised or dressed and sutured within six hours of their occurrence, if the best protection against infection is to be given. However, we are only human beings, and if at the end of a long day an accident occurs and the mortally injured victim is brought in, we are in the grip of unrelenting time with insufficient energy to continue. That is to say, we recognize the need, and we do need skilled assistance; but from where does it come? By now this question should be familiar in your ears: the need of skilled assistance; and from where does it come?

But there is another facet of the time problem. Most dislocations and spinal and pelvic fractures become fixed if left untreated for about three weeks, and after that length of time tendon injuries and avulsed muscles, as in a dislocated shoulder, are difficult to remedy. I suggest, therefore, that within three weeks an accurate assessment, besides reestablishment of nutrition, should have been achieved, the final remedies should have been applied, and the patient should be truly convalescent. There is really only one condition that precludes this with any frequency, and this is a post-traumatic mental upset following a head injury.

The following are examples of cases in which time was lost.

A man who dislocated his shoulder. The dislocation was reduced, and after two days his doctor recognized that he had no abduction power. An abduction frame was applied, and after three months, when no improvement in abduction power was evident, reconsideration was followed by consultation. But the capacity of anyone to restore the avulsed shoulder capsule and its muscles was then negligible.

After a motor accident, a man had a sore neck and a weak, painful arm. After some weeks of suffering and no apparent progress, his condition was reassessed. He was found to have a fixed cervical subluxation with crush of a cervical nerve going to the arm; but at six weeks the time has passed for correction of the subluxation, and the prospect of nerve recovery is doubtful, even with operative decompression.

Time, with the natural process of healing irrespective of deformity, drives us to the earliest recognition of the defect and its correction. Procrastination leads usually to consolidation of a disability beyond our correction. Curiously, the only thing that postpones this time effect is medical treatment. For example, a dislocation of the neck treated unsuccessfully by head traction may still be subject to correction three months after the accident, whereas the same injury, if untreated, will have consolidated after a few weeks. If this state of affairs does not arouse your curiosity, it certainly does mine.

Comment.

I have spoken of a great modern killer and crippler in road accidents. I have stressed the importance of the assessment of patients as regards both injuries and their

severity. I have mentioned the cost of treatment in time and money. These, I think, demand that a practitioner shall be able to call for help by materials, nursing and consultation free of cost. And what does our present medical organization offer? I have mentioned the plight of those outside Adelaide. To these we can offer only telephonic help and tedious road transport, and the latter in a private capacity. I have stated the decisive factor of time in the treatment of injuries.

I think it best now to digress a little and state my estimate of the calibre required in this type of surgery. I believe it is the quintessence of general surgical training. To pick out of a wrecked vehicle or a bombed building a smashed fellow man, take him to hospital, revive him and, in his weakened state, take only the essential remedial steps, requires the zenith of clinical assessment, judgement and technical skill. Even to recognize the essential remedial steps in a severe case of multiple injury is a hallmark of great judgement and wide understanding of structure and function.

Speaking as a teacher in a medical school, I see no possibility of achieving such training in a year or so after graduation. I would undertake to turn out graduates competent to perform hysterectomy, cholecystectomy and even gastrectomy in a few years, because these are set procedures; but trauma involves all things. It occurs suddenly with no time to consult books or oracles. What, then, can I do as a teacher? I can teach the new graduates what to do when they are faced with a severe injury. Having achieved this, I then can offer them only the assistance of a telephone conversation—a miserable aid, when they need materials and nursing and professional help to save or restore a fellow man.

In the business of road accidents we are faced with two main problems: first, the prevention of accidents, and this involves the question of whether we human beings are safer with unrestricted speed than we are with unrestricted dangerous drugs; and secondly, our own organization to deal with those injured on the road. As to the latter, several factors are already in being. (*a*) There is now deliberate instruction of medical students in the surgery of trauma. (*b*) Resuscitation materials are available through the Red Cross service. (*c*) There are good hospitals in many country centres. (*d*) There is an increase in trained personnel, but these tend to be in Adelaide. (*e*) There is a slow movement by the Government towards the establishment of a traumatic centre at the Royal Adelaide Hospital. (*f*) There is the telephone. (*g*) There is the suggestion of more development in air taxi service. Here we have the reservoir of trained personnel, the materials, the communications and possibly the effective transport. There are good local hospital facilities and local medical men coping well now, but fit to do brilliantly if they knew they could marshal all the necessary aids to their patients within an hour or so.

What we need is an overall plan. Even an indifferent plan is better than none, and I propose the following:

1. The local medical man must always be the key person; the patient is his patient. He must make the assessment and determine the requirements.

2. The local medical man should have at his call a team consisting of a doctor, a nurse and a trained orderly with the following equipment: (*a*) to check the assessment, (*b*) to aid in treatment and to carry out special treatments, (*c*) to outline the plan of treatment, (*d*) to be self-sufficient in material needs.

3. This team will not, like a broody hen, sit down on casualties, but, having assisted, will move back to base.

4. The teams should be formed as a government service at the Royal Adelaide Hospital and at such country centres as are able to form them. That is the essence of the plan.

As a profession we are responsible, as is the Government, for the well-being of the people of this State. I should be glad to see such a demand go forward to the Government—that not only should there be a traumatic block erected at the Royal Adelaide Hospital, as they propose, but that a traumatic service be created. Such teams should be formed and equipment prepared which, on need, could be moved to assist the effective recovery of victims of what is now a national disease—road accidents. It would be no new burden if the professional service was made honorary. From the Government's point of view, much of the transport costs would be recoverable from insurance. Probably the nursing component of the team would need payment.

The Government now provides such a service for Adelaide and the suburbs, why not for the whole State? It needs only some organization and some provision of road and air transport.

The idea is certainly not new. It is not untried, and it is not unnecessary. In fact, there is a crying demand for such a thing; but I am certain that it is not in being because no one has asked for it. I consider it our duty as a profession to see that some such cover is provided for the citizens, who are all too commonly injured on the road.

Reports of Cases.

IDENTICAL SKIN-ERUPTION IN FIVE MEN AFTER MASSIVE EXPOSURE TO JELLYFISH (AURELIA).

By Hanns Pacy,
Tea Gardens, N.S.W.

Aurelia, or the "saucer blubber", "seems to be one of the few large medusoid jellyfish which can be handled without fear of a sting at all times of the year" (Pope, 1953), and bathing in tubs with blubber-filled sea-water was recommended as a cure for rheumatism in the East Frisian Islands during the nineteenth century. However, a recent observation makes me doubt whether these jellyfish are entirely harmless to all persons.

Clinical Record.

At 4 p.m. on December 12, 1955, five brothers, all oystermen, presented with an identical itchy, papulovesicular rash, covering the hairy parts of both feet up to about half the length of the tibia (Figure I). The papules

Figure I.

were sharply defined, arising out of unaffected skin, pink in colour, and between four and eight millimetres in diameter. In the centre of the larger lesions there were small vesicles of up to four millimetres in diameter; the vesicles contained serous fluid.

Interrogation disclosed that the five brothers, at about 2.30 p.m. on December 11, 1955, had been walking on the beach through water about one foot deep, where the incoming tide had left thousands of jellyfish, all of the same kind.

They felt no sensation and saw no rash immediately, but next morning, about sixteen hours after the exposure, they woke up with the itchy papules, and these had been growing worse since. The brothers all said that the same thing had happened about two years previously; the same rash had appeared, and lasted about five days. None of them had ever been ill before, except the third oldest, who had had his tonsils removed several years earlier because of recurrent respiratory tract affections. Their only sister-in-law is one of my asthma patients. There was no other family history of allergy.

As the problem in all investigations of venomous maritime animals is the difficulty of obtaining the offending animal, the scene of contact was inspected by me at the earliest possible time—namely, the following morning, not quite two days after the injury had been caused. The stretch of shallow water was found, and the path of the brothers from the beach to their boats was retraced. There were more dead jellyfish in about the entire one foot depth of the water than intervening water; but although I waded around among them and rubbed my skin with them, I did not get a rash, either on my bare leg or on my control leg coated with "Phenergan" ointment. The jellyfish were all of one type. There were no whole bluebottles or parts of them, and no brown saucer-blubbers. The mass of jellyfish reached about 50 yards out into the water of the Port Stephens harbour. The brothers said that the stretch of shore was still in the same state as when they waded through it, but the fish seemed to be dead and disintegrating.

About two pints volume of water and specimens were collected on the stated route of wading, and sent to the Director of the Australian Museum, Mr. J. W. Evans, who had the specimens examined by Mr. F. A. McNeill, M.Sc., who reported as follows:

> As far as it is possible to tell from the fragmented remains, it would seem that the jellyfish are representatives belonging to the genus Aurelia, which is never considered an injurious type.

For the purpose of treatment, the five brothers were divided into two groups as follows: Group A, the three most severely affected (more than 50 papules on both legs), who received an intramuscular injection of promethazine hydrochloride, followed by the administration of 25 milligramme promethazine hydrochloride tablets three times a day, and chlorcyclizine (1%) and calamine cream (8%) applied locally; Group B, the two brothers who had less than about two dozen papules on both legs, who were treated by the application of calamine lotion only. The results of treatment are shown in Table I.

Discussion.

Could any other jellyfish, like physalia (bluebottle) or brown blubbers (*Castocylus mosaicus*—Flecker, 1945) or another invisible marine animal have caused the skin reaction? There is no evidence in this direction. Stings of these larger blubbers are usually noticed immediately, when one swims underneath them, and any skin reaction in susceptible individuals arises with the speed of an Arthus phenomenon. A keen surfer, I have often been driven from the water by these other types of jellyfish, but have never had a rash. These five men noticed nothing at all until they woke up about sixteen hours after contact. The rash reached its peak between twenty-four and forty-eight hours after contact, and the contact must have been massive. No other fact in the patients' history could account for the appearance of the rash in five men simultaneously in identical areas, and the same sequence of events had been noted by the patients two years earlier under seemingly identical circumstances. At the time of contact the Aurelias must have been fresh and alive. In the larger blubber stings there is pain. In these stings there was no pain, but only itching, and that only after sixteen hours. The fact that the itching was relieved by antihistaminics can at present only be placed on record. The number of patients is too small to allow the assumption of any involvement of the histaminase mechanism. However, the evidence points in this direction.

Summary.

The simultaneous appearance of an itchy, papulo-vesicular exanthema on the feet of five adult brothers, sixteen hours after contact with shallow water massively infested with a jellyfish seemingly of the genus Aurelia, is described. Internal and external antihistaminic treatment relieved the itch in the three more severely affected brothers, but did not affect the eight-day course of the disease as compared with two controls treated by the application of calamine lotion.

TABLE I.

Day After Contact.	Group A. C., 32 years, D., 38 years, E., 32 years.	Group B. Mo., 28 years, Ch., 40 years.
1	Papules reach height of development. Antihistaminic treatment commenced.	Papules reach height of development. Application of calamine lotion commenced.
2	Papules at height of development. Itching ceased.	Papules at height of development. Itching still present.
4	Papules fading, vesicles drying up. No itching.	Papules fading, vesicles drying up. Itching less.
6	Lesions disappearing, faintly visible. No symptoms.	Lesions disappearing, faintly visible. No symptoms.
8	Lesions gone.	Lesions gone.

Acknowledgements.

I am much indebted to Professor E. Ford, Director of the School of Public Health and Tropical Medicine, Sydney, for information and advice, to Mr. J. W. Evans, Director of the Australian Museum, and to Mr. F. A. McNeill, for their report on the specimen and their advice, and to the editors of the *Australian Museum Magazine* for permission to use the picture of an Aurelia.

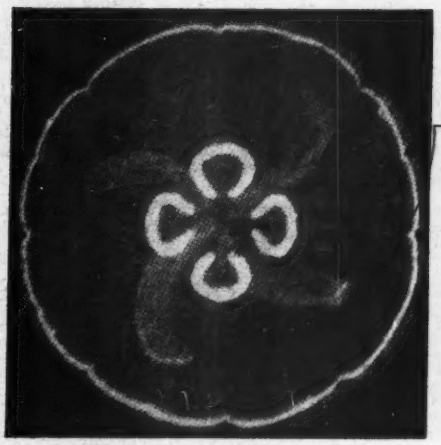

FIGURE II.

An Aurelia (reproduced by courtesy of the editors of the *Australian Museum Magazine*).

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Reviews.

Essentials of Clinical Proctology. By Manuel G. Spiesman, M.D., B.S., LL.D., F.I.C.P., and Louis Malow, M.D., B.S., F.A.C.S.; Third Edition; 1957. New York and London: Grune and Stratton. 9" x 6", pp. 324, with 129 illustrations. Price: $8.75.

THIS first edition of this book appeared in 1946; this is the third edition, and the authors are to be congratulated on their achievement. The subject matter is set out clearly, and considerable detail has been compressed into each chapter.

The sections on cryptitis, papillitis and pectenosis are sound, the illustrations, especially the colour reproductions, are of good quality, and the publishers should feel justly proud of this book.

A book of this size tends to deal with diseases in too much detail for the general practitioner, but too little for the surgeon. Furthermore, lack of proportion is inevitable; for example, malignant tumours of the rectum and colon are given seven pages, whilst tuberculosis is given the same space.

This book will prove useful to any practitioner concerned with ano-rectal diseases, and can be recommended.

Collagen Diseases: Including Systemic Lupus Erythematosus, Polyarteritis, Dermatomyositis, Systemic Scleroderma, Thrombotic Thrombocytopenic Purpura. By John H. Talbott, M.D., and R. Moleres Ferrandis, M.D. New York: Grune and Stratton, Inc. 8½" x 5½", pp. 241. Price: $6.50.

THIS monograph on collagen diseases includes descriptions of systemic *lupus erythematosus*, polyarteritis, dermatomyositis, systemic scleroderma and thrombotic thrombocytopenic purpura. It is the result of twenty years' interest in and study of these conditions by John H. Talbott, Professor of Medicine at the University of Buffalo School of Medicine, Buffalo, New York, with assistance in the library work by Dr. Ricardo Ferrandis.

The description of each condition is thorough, controversial aspects are discussed without prejudice and there is a very complete bibliography. In spite of this the book is kept to an easily readable size. The printing is excellent, and the reproductions, coloured and otherwise, are of an unusually high standard.

This monograph forms a convenient and thorough reference book for all those conditions grouped under the description of collagen diseases.

Diseases of the Nose, Throat and Ear. By Howard Charles Ballenger, M.D., F.A.C.S., and John Jacob Ballenger, B.S., M.S., M.D.; Tenth Edition; 1957. Philadelphia: Lea and Febiger. Sydney: Angus and Robertson, Limited. 9½" x 6", pp. 668, with 550 illustrations and 11 plates. Price: £9 12s. 6d.

A TENTH EDITION of this book, now in its forty-eighth year, is welcome. Its chief merit may be said to be its completeness; in fact, it is almost an encyclopædia of oto-rhino-laryngology, and it is this that will make it a useful book of reference for the medical student, as even the rarest condition in the field of ear, nose and throat diseases finds mention. For the specialist it is an authoritative and condensed treatise on the subject, and there have been many additions and improvements to the previous editions.

In the chapter on labyrinth tests, Lewey has written a new section on vestibular tests in intracranial lesions, while the chapters on inflammatory diseases of the labyrinth and their surgical treatment are almost entirely new, and are excellently illustrated. The chapters on allergy and malignant diseases have also been rewritten and are very comprehensive. Throughout the book full use has been made of photographs, photomicrographs and drawings. In this edition there is an excellent section on headache, one of the commonest symptoms encountered in ear, nose and throat work. The authors estimate that probably less than 5% of all headaches are due to infection of the sinuses, a figure with which we would agree.

The last part of this book is devoted to endoscopy, and endoscopic methods of diagnosis and treatment are carefully described. This part of the book has been written by Tucker, Chevalier L. Jackson and Atkins, and the standard is no less high than one would expect from such workers. However, from a country where mechanization holds such a high place, it is strange that authors have never described the use of a mechanical headrest for endoscopic work. A headrest such as Hazlinger's is infinitely preferable to an untrained assistant, and a trained one is not always available in these times. Gastroscopy, both for diagnosis and for peroral removal of foreign bodies in the stomach, is very well described.

In short, it can be stated that this book maintains the high standard of the previous editions, and it can be wholeheartedly recommended to the student, the medical practitioner and the consultant.

An Atlas of Muscle Pathology in Neuromuscular Diseases. By J. Godwin Greenfield, M.D., G. Milton Shy, M.D., Ellsworth C. Alvord, jnr., M.D., and Leonard Berg, M.D.; 1957. Edinburgh and London: E. and S. Livingstone, Limited. 9¼" x 6¼", pp. 116, with 12 illustrations. Price: 45s.

THIS atlas, which is in two parts, is the result of a study of over 100 cases of neuro-muscular disease. Part I deals with the histological reactions of skeletal muscle to disease, and the changes are illustrated without reference to the clinical diagnosis. In Part II the pathological changes are correlated with the clinical findings. There are 93 photographs of micro-sections which, with few exceptions, are of first-class quality. In most ways, however, it is a disappointing book. The list of references given at the end of the book is short and is no doubt highly selected from the available literature; but it is possibly inadequate for the beginner. At times the text is brief and confused, with many needlessly bulky tables, and some of the coloured photomicrographs are too deep in tone. Despite these criticisms, the authors have made a valuable contribution to a difficult subject, and all pathologists and clinicians interested in neuro-muscular diseases will need to study this book.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Aids to Diagnosis and Treatment of Diseases of Children", by F. M. B. Allen, M.D., F.R.C.P. (Lond.); Tenth Edition; 1957. London: Baillière, Tindall and Cox. 6¼" x 4", pp. 314. Price: 10s. 6d.

One of the "Aids" series designed for the undergraduate student and the family doctor.

"Spontaneous and Habitual Abortion", by Carl T. Javert, M.D.; 1957. New York, Toronto and London: The Blakiston Division, McGraw-Hill Book Company, Incorporated. 9" x 6", pp. 464, with 196 illustrations. Price: $11.00.

A study based on analysis from the clinical, obstetric and pathological points of view of 2000 cases of abortion.

"Aids to Ophthalmology", by P. McG. Moffatt, M.D. (Lond.), M.R.C.P., F.R.C.S. (Eng.), D.O.M.S.; Eleventh Edition; 1957 London: Baillière, Tindall and Cox. 6¼" x 4", pp. 296, with 118 illustrations. Price: 10s. 6d.

One of the "Aids" series designed for the undergraduate student and the general practitioner.

"X-Ray Technology", by Charles A. Jacobi, B.Sc., R.T. (A.R.X.T.), M.T. (A.S.C.P.), M.T. (A.M.T.), and Donald E. Hagen, R.T. (A.R.X.T.), with a foreword by James M. Hilton, M.D.; 1957. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical), Limited. 9¼" x 6¼", pp. 412, with 320 illustrations. Price: £5 7s. 3d.

A book for X-ray technicians.

The Medical Journal of Australia

SATURDAY, OCTOBER 19, 1957.

MENTAL HEALTH.

Health Week in New South Wales, which is to take place during the week commencing October 20, 1957, will this year emphasize the theme of mental health. The Health Week Slogan which has been chosen is "Broaden Your Outlook on Mental Health". The subject is, of course, one of world-wide topical interest, an interest stimulated on the one hand by the great and increasing hazards to mental health created by the modern world, and on the other hand by a growing understanding of the ways in which mental health may be cultivated. On the international level, these matters are receiving a great deal of attention. Unfortunately, sometimes enthusiasm runs beyond reasonable bounds, and there have not been wanting those who are prepared to lay down a simple psychiatric formula for setting the world aright; but a great deal of honest and sober thought has also gone into these problems, and through such bodies as the World Federation for Mental Health important issues are being faced. It is encouraging to know that there are people in Australia who are concerned with these matters and who wish to do something about them. One such body, which is now getting actively under way, is the New South Wales Association for Mental Health, a voluntary organization with its headquarters in Sydney. Its inaugural meeting was held on October 3, 1956. Its predecessor, the Council for Mental Hygiene, came into existence in 1932, lapsed during the war years, was reformed in 1950, and then gradually lapsed again. It is to be hoped that the progress of the New South Wales Association for Mental Health will be less halting. Stated in general terms, the objects of the new Association are four: first, the promotion of mental health; second, the prevention of mental disorders and handicaps; third, improvement in the care and treatment of persons suffering from mental disease and handicaps; fourth, the creation of a modern constructive community attitude towards mental health. Membership of the Association is of two kinds, individual membership and organization membership. These are again subdivided into ordinary membership, to which are admitted an unlimited number of persons or organizations interested in mental health, willing to subscribe to the purpose of the Association and prepared to work for the furtherance of its aims, and the membership of specially designated members or member organizations. The specially designated individual members include the Professor of Psychiatry in the University of Sydney, who is at present the President of the Association, the Inspector-General of Mental Hospitals, the President of the Special Group of Neurology, Psychiatry and Neurosurgery of the New South Wales Branch of the British Medical Association, the Director-General of Education, the Director of Child Welfare, the Comptroller of Prisons, the Professor of Psychology in the University of Sydney, the Professor of Applied Psychology in the New South Wales University of Technology, the Director of the Department of Social Work in the University of Sydney, the Director of the School Medical Service, and the Officer-in-Charge of the Professional Services Office, Commonwealth Department of Labour and National Service. Specially designated organizations are the Council of Social Service of New South Wales, the New South Wales Branch of the British Medical Association, the New South Wales Branch of the Australian Association of Psychiatrists, the New South Wales Branch of the British Psychological Society, the New South Wales Branch of the Australian Association of Social Workers and the New South Wales Teachers' Federation. As is usual in organizations of this kind, there is a Council elected from representatives of ordinary and specially designated members and organizations, an Executive Committee and various subcommittees responsible to the Executive and to the Council for such things as programme, membership, finance, publicity *etc.* The present membership of the Association is made up of individual members to the number of 190, and organizations to the number of 34. The membership is stated to be continually increasing.

So far, the Association's activities have been largely confined to the business of setting up, but it has already held a number of public meetings, at which addresses have been given by Professor W. H. Trethowan, Dr. E. Cunningham Dax and Dr. André Ballard, a visiting psychiatrist from the United States. In addition to providing a means of education for the general public in mental health matters, the Association plans to promote instruction for special groups. An activity in this direction at present under way is the giving of psychiatric instruction to those studying for the ministry. Other similar projects are planned.

It was mentioned earlier that the slogan for Health Week in New South Wales this year is to be "Broaden Your Outlook on Mental Health", and it is notable that the New South Wales Association for Mental Health and the other organizations to which it is related will be playing a prominent part in the organization and running of the week's programme. It is hoped that this will provide an excellent opportunity for bringing the name of the Association and its objects very much into the public eye, and it is also to be hoped that the medical profession as a whole will take this opportunity to interest itself in the aims of the Association, and to encourage general interest in its development. Those who are concerned with the Association hope that before long it will become a firmly established organization with a central headquarters. It is planned to operate an information service from which members of the public can obtain advice on mental health problems of all kinds, and on seeking help, be speedily directed to the particular place or organization which

can be expected to give them the most immediate and appropriate assistance. These are worthwhile aims, and there is no denying the need that exists in our community as elsewhere for some such activity. It should be a help to the family doctor and in no way cut across his practice. The great need is that the ideals of mental health and the opportunity to achieve it should penetrate to ordinary people in their everyday lives. On the international level, much is being said about the importance of mental health in maintaining a right understanding between nations, but even there it is recognized that the problem and the place at which it particularly needs to be met are on the personal level. The position was well summed up by Dr. Frank Fremont-Smith in his presidential address to the eighth annual meeting of the World Federation for Mental Health held in Istanbul in August, 1956:[1] "Just as charity begins at home, so also in the home, in the family, we must build the foundations for the peaceful use of human power—for the mobilization and release of the power of the human spirit for peace."

Current Comment.

INSTINCT IN MAN.

An interesting contribution to the controversial subject of instinct has been made by Ronald Fletcher,[2] who is Lecturer in Sociology at Bedford College, London. In a review of previous work in this field Fletcher makes special reference to William James, McDougall, Lloyd Morgan, Tinbergen and Freud. He points out that low in the animal scale emotion plays little or no part in contrast with behaviour in more highly developed organisms. Man alone is able to describe his experiences; hence there are limits to comparison between human and animal psychology, if indeed animals can be said to have a psychology. Freudian theory comes, of course, under close scrutiny. Freud arbitrarily dismissed earlier work (except for a reference to Le Bon) and set out on his own line of investigation; but he said that his system would have to be set on biological foundations some day. It is not clear whether in the Freudian scheme ego and sex are to be regarded as primary or basic drives. Freud never fully worked out his theory of life and death instincts, which he added late in his investigations. Freud held that the ultimate aim in human behaviour was to achieve a kind of Nirvana, and that the function of the nervous system was to seek the extinction of all stimuli. Fletcher disagrees on the question of inheritance of the super-ego, which Freud suggested arose from the killing of the father of the primitive horde and was then phylogenetically transmitted from one generation to another. A cultural transmission is not to be confused with an instinct in the generally accepted sense. There is, therefore, no social instinct. Fletcher is specially concerned with the impact of instinctive drives upon social adaptations, and stresses the importance of the earliest affective experiences within the family circle, to be followed in due course by the influence of neighbourhood and school. The early patterning of affective responses, to begin with on the instinctive level, has, in Fletcher's view, powerful influence over the process of education, as indeed Freud pointed out—education not only in the narrow scholastic sense, but in learning to be a useful and acceptable member of society. Fletcher strongly advocates extension of education in social studies. Members of society should be ruled by love rather than by law.

In conclusion, Fletcher outlines a new approach to social psychology, with the help of several diagrams and tables, while admitting that there can be no agreement as to where to place many forms of behaviour. His critical work should appeal to psychologists, anthropologists and psychiatrists.

[1] "Family Mental Health and the State: Proceedings of the 8th Annual Meeting of the World Federation for Mental Health, Istanbul, August, 1955." London: H. K. Lewis and Company, Limited, for World Federation for Mental Health. 8½" × 6", pp. 170. Price: 15s.

[2] "Instinct in Man: In the Light of Recent Work in Comparative Psychology", by Ronald Fletcher, B.A., Ph.D.; 1957. London: George Allen and Unwin, Limited. 9¼" × 6", pp. 352. Price: 40s.

SCHIZOPHRENIA AS A MAJOR PUBLIC HEALTH PROBLEM.

To general practitioner and psychiatrist alike, schizophrenia is a practical problem, for which there is no single simple solution. It is certainly one of the most serious of mental diseases and constitutes a major public health problem in many countries of the world, where schizophrenic patients occupy nearly half the space in psychiatric hospitals. This last statement comes from a Study Group on Schizophrenia of the World Health Organization, which met in Geneva in September, 1957, under the chairmanship of Professor Aubrey Lewis, of London. The Group, composed of 12 scientists from Germany, Sweden, Peru, Italy, Nigeria, Switzerland, Thailand, China, Great Britain and the United States of America, considered the problem of schizophrenia from the point of view of diagnosis, cause, treatment and prevention. The report of the Group points out that schizophrenia is a disease which, contrary to what was once believed, does not follow a characteristic course and still less follows an invariably unfavourable one. The disease is diagnosed from psychological abnormalities and an examination of the patient's previous life and personality. The Group states that perhaps the most striking characteristic of the schizophrenic is his rupture of the links which ordinarily bind us into human society and make of human relations a source of happiness and security. The essential structure and clinical pattern of the disease show remarkable similarity in widely separated societies all over the world; nevertheless, cultural traits colour the psychological phenomena upon which the diagnosis of schizophrenia turns. Although diagnosis is at present based on psychological characteristics alone, the Study Group holds that genetic (hereditary), somatic (bodily), social and psychological causes operate in conjunction to produce schizophrenia.

The report states that while genetic factors underlie this disease in at least a very large proportion of serious cases, they do not invariably lead to open schizophrenia. In the European and American societies so far studied, the proportion of people genetically predisposed to schizophrenia is estimated to lie between 1·2% and 5%, but only 1% of those who live to the age of 60 years have been found to develop the disease. The Study Group's conclusion was that there was no feasible way of reducing the hereditary frequency of this disease through sterilization and other measures, although genetic counselling could be of value in individual cases. Among non-genetic causes are those which act directly on the functioning of the organism and particularly of the brain, *e.g.*, toxic factors, or others which upset the economy of the body less directly, and thus create favourable conditions for an activation of the genetic factor. There are also psychological and social factors. Psychological injury, particularly when it is inflicted from an early age onwards, and for long periods of time, may play a role in the development of schizophrenia. Other evidence suggests that social disorganization of a community—as indicated by the large number of people who are unmarried, or are isolated from normal family or social life, and by poverty—is another contributing factor. Still other data hint that in some populations undergoing rapid cultural change, marked by a break-up of established social and cultural patterns, a higher incidence of open schizophrenia is to be expected.

All this deserves the close attention of health and other officials who have to make decisions on social and economic

policy and on city planning, according to the Group. It may also affect social policy in matters which influence the frequency with which families are disunited or cultural ties ruptured. Much more research is needed to obtain precise knowledge of the mechanisms of cooperation of these different factors; therefore various fields for investigation are described in the WHO report, which stresses that "psychiatric research is not a luxury", but absolutely essential to produce advances in treatment and prevention, not only of schizophrenia but of all mental disorders. At the present time no specific preventive measures are available to reduce the frequency of schizophrenia. However, all factors which promote good mental health may be assumed to be of use in preventing some of the manifestations of this disease.

On the question of treatment, the report states that there are patients who recover so completely that there is no evidence of their former illness. To some degree, almost all schizophrenics could be benefited by one or more of the treatment techniques now available. The three types of treatment—bodily, psychological and environmental—are complementary. They can be undertaken only by skilled personnel always under a responsible psychiatrist, since each of these therapies is potentially dangerous if not properly administered. Schizophrenics should be treated early with a minimum period of hospital care; but such early treatment requires early recognition of the disease, and thus more education of medical students and medical practitioners is needed, as well as education of the public. Education of the public is particularly urgent, as the report makes clear: "The climate of public understanding regarding the prevention and treatment of mental disease oscillates between rejection and uncritical enthusiasm. Thus each new psychodynamic theory and each new drug is hailed by some as though it were the answer to all our mental problems. . . . A greater public understanding that the problem is a complex one not to be solved by slogans or summary assurances would be salutary. . . . Mental hygiene societies, religious groups, parent-teacher associations and similar organizations can contribute to this important end." The report concludes: "It will be a humanitarian act as well as a sound economic investment to provide substantial support for research into the nature, causes, treatment and prevention of schizophrenia."

SEDATIVES.

In this day of new and ever more exotic drugs and especially with the current preoccupation with sedatives, tranquillizers and the like, it is refreshing to find so eminent an authority on therapeutics as Professor D. M. Dunlop,[1] of Edinburgh, coming down on the side of the old well-tried favourites. He prefaces a discussion of the several main groups of sedative drugs with some commonsense, even homely, advice about the personal management of the patient, and concludes with a list of his favourite hypnotic and sedative preparations. For irritable infants his choice is syrup of chloral (seven minims with liquid extract of liquorice, glycerin and water to 60 minims) given before each feed. When a hypnotic-analgesic preparation is required at night for an adult, he favours chloral hydrate (20 grains) and tincture of opium (15 minims) made up with syrup of orange and water to half an ounce. Intramuscular injection of paraldehyde is his prescription for delirium and *status epilepticus*; the dosage will depend on the clinical condition. Bromides, we are pleased to see, he discards. Of the barbiturates, phenobarbitone is recommended when a long-active sedative is required and for *grand mal* epilepsy, quinalbarbitone ("Seconal") when a short-acting hypnotic is needed, and butobarbitone ("Soneryl") for the early morning wakefulness of old age.

Professor Dunlop discusses some of the newer drugs and tranquillizers, but seems unimpressed. His verdict is that should a sedative prove necessary in the treatment of the more minor anxiety states commonly encountered in practice, it is wiser in the present state of our knowledge to employ phenobarbitone. He is not happy about the severe depressive effect of reserpine, and points to a number of serious side-effects likely to be produced by chlorpromazine, despite its remarkable action in certain psychotic conditions. He suggests that the most important role for chlorpromazine is in the management of the terminal phases of hopeless conditions such as inoperable cancer, when its value may be seen in enhancing the effect of analgesics and sedatives and often in abolishing nausea and vomiting.

[1] *Practitioner*, 1957, 178: 26 (January).

THE INFLUENCE OF CORTISONE ON TUBERCULIN SENSITIVITY IN TUBERCULOSIS AND SARCOIDOSIS.

As we have recently referred[1] at some length to the significance of the tuberculin skin test in sarcoidosis, it is worth reviewing briefly the latest contribution to this subject. J. G. Scadding and K. M. Citron[2] have reinvestigated the vexed question of the influence of cortisone upon the tuberculin reaction, paying particular attention to the likely sources of error or of difference in results in previous studies. Their method was to compare the effect, in terms of the size of the area of induration produced, of the intradermal injection of tuberculin in the form of purified protein derivative, with the effect of the same intradermal dose of tuberculin given with 1·25 milligrammes of cortisone acetate in the same volume of vehicle (0·1 millilitre). They found a slight tendency for cortisone to inhibit the development of larger reactions more than small ones, but this was less impressive than the striking correlation between inhibition by cortisone and the size of the tuberculin dose (in tuberculin units). In other words, the inhibitory effect of cortisone decreased as the level of tuberculin-sensitivity fell. This observation was made in a group of 66 patients with active pulmonary tuberculosis. In 11 of 16 patients with active disease who had been desensitized to tuberculin by a course of intramuscular injections of tuberculin, the intradermal injection of tuberculin *plus* cortisone produced a positive reaction where the result had previously been negative to the same dose of tuberculin. In a small group of healthy non-reactors to tuberculin the response to tuberculin *plus* cortisone remained negative. Exactly half of 28 patients with sarcoidosis who had negative reactions to 100 tuberculin units showed positive reactions to the dose of tuberculin given with cortisone. The similarly between the reactions of this group and those of the desensitized tuberculous patients is at once apparent.

The ætiological significance of altered skin sensitivity in sarcoidosis has already been considered in the leading article previously mentioned. The inhibitory effect of cortisone upon the skin reaction in highly sensitive individuals is regarded as a manifestation of the anti-inflammatory action of cortisone; Scadding and Citron give reasons for their belief that the enhancement of the reaction by locally applied cortisone in certain circumstances is due to its tendency to promote retention of the antigen, tuberculin, in the injected area, in much the same way as an oily vehicle does. It is suggested that the persistence of tuberculin at the injection site allows time for the development of a sufficient concentration of antibody to provoke a demonstrable reaction.

The practical importance of these findings is clear. In a patient who is tuberculin-negative the diagnosis of sarcoidosis receives considerable support if a positive reaction is produced by the injection of both cortisone and tuberculin (it being assumed, of course, that the patient has not been deliberately desensitized). However, failure of the combination to elicit a reaction may still be expected in about 50% of cases. A point of interest in regard to the diagnostic use of the combined injection to which Scadding and Citron do not refer is the effect of cortisone upon the reduced tuberculin reactivity of some patients with Hodgkin's disease and other reticuloses.

[1] M. J. Australia, 1957, 2: 253 (August 17).
[2] *Quart. J. Med.*, 1957, 26: 277 (July).

Abstracts from Medical Literature.

MEDICINE.

Hormones in Sinusitis.

M. Samter (*J.A.M.A.*, February, 1957) discusses the hormone treatment of nasal conditions associated with allergy, œdema and infection. ACTH and cortisone have no place in the treatment of acute and subacute nasal conditions, whatever their origin. Infections may require antibiotics and drainage. Allergic conditions should be treated by removal of the cause, though in critical conditions hormones should be used. In chronic allergy, hormones should be given only when conservative measures have failed or when polypi develop. In these cases symptoms often recur, and the administration of corticosteroids may have to be continued at intervals over long periods, with the usual risks of peptic ulcer, resistant infections, emotional upsets, increased susceptibility to virus diseases, and atrophy of the adrenal cortex or loss of function of the cortex, which may necessitate ACTH or may be fatal. The alternatives in such cases are often difficult.

Cobalt^{60} in Cancer.

G. H. Fletcher (*J.A.M.A.*, May 18 1957) discusses the present status of cobalt^{60} teletherapy in the management of the cancer patient; Co^{60} teletherapy is a form of supervoltage radiation. It offers the possibility of increasing the dosage of radiation because of better skin tolerance. However, it has to be used with due regard for possible later appearance of subcutaneous and deep muscle fibrosis. Co^{60} is not indicated in the treatment of lymphomata of superficial lymph nodes, and its use is elective in mediastinal and retroperitoneal lymphomata. It is valuable in cancers of the oro-pharynx and urinary bladder, and in late cancers of the *cervix uteri* and vagina. The effect of Co^{60} is for all practical purposes identical with that produced by two to three million volt X-ray generators; Co^{60} has no specific action in the treatment of human cancers.

Hepatic Insufficiency.

M. Feldman (*Am. J. M. Sc.*, March, 1957) presents a report of hepatic insufficiency in 32 necropsies. In 1319 autopsies on adults, the author found 32 cases of hepatic insufficiency, an incidence of 2·4%. This series was studied for the purpose of (i) determining the incidence, (ii) determining the disease process in the liver, (iii) noting the prevalence of associated biliary tract disease, (iv) determining the association of pancreatic disease, and (v) reviewing briefly the subject of hepatic insufficiency. The primary cause of liver insufficiency is a destruction of liver cells due to intrahepatic or extrahepatic disease. There is a loss of liver function in detoxifying, or in chemical action relating to nitrogen, urea and ammonia metabolism, or both. The following conditions are the chief causes of hepatic insufficiency: (*a*) cirrhosis of the liver; (*b*) necrosis of liver cells; (*c*) malignant disease of the liver; (*d*) inflammatory processes of the liver; (*e*) biliary obstruction from obstruction of or pressure upon the bile ducts. Laennec's cirrhosis of the liver occurred in 14 cases of this series. Biliary cirrhosis occurred in five cases, toxic cirrhosis in three cases, primary carcinoma of the liver in four cases, metastatic carcinoma of the liver in eight cases, hepatitis in two cases, acute necrotizing hepatitis in two cases, and liver cell necrosis in three cases. Cirrhosis of the liver was the commonest cause of hepatic insufficiency. Biliary tract disease was the second largest group found among the cases. Pancreatic involvement is not often a causative factor in the production of liver insufficiency. The ages of the present series of patients varied from 31 to 78 years, and 31 of the 32 cases occurred in subjects aged above 40 years. The sex distribution was about equal. The size of the liver varied; in eight patients it was small, in eight patients it was normal in size, and in 15 patients it was enlarged. The size of the spleen was small in one case, normal in 10 cases and enlarged in 20 cases. The by-products of amino acids and protein metabolism appear to play a major role in the production of symptoms in hepatic insufficiency and hepatic coma. As a result of severe liver damage, the liver is unable to metabolize the various chemical products which are normally brought to it. Since the liver is one of the most important organs in which ammonia, a by-product of amino acids and proteins, is metabolized into urea, the blood urea and serum protein examinations should provide variable and often definitive information regarding the changes in function of this organ. The elevated blood ammonia level observed in hepatic disease is due to an impairment of urea conversion of ammonia. Although it is stated that a decrease in blood urea content may be expected in cases of hepatic insufficiency, in many cases the urea values may rise and markedly decline during the terminal stage of the disease. Although the liver plays an important role in the metabolism of plasma protein, the total serum protein values may be within normal limits in many instances, and the change in the ratio between the albumin and globulin fractions frequently depends upon the stage of the disease. In cases of hepatocellular damage, it is stated that there is a diminution in the total cholesterol content, and the plasma level may fall below 100 milligrammes per 100 cubic centimetres. The blood sugar levels seem to be low in a large percentage of cases of hepatic insufficiency. There is usually a wide range of prothrombin time activity in cases of hepatic coma and insufficiency. A prothrombin time more than five seconds longer than normal is commonly observed in these conditions. The serum alkaline phosphatase activity is generally increased in cases of extensive liver damage, but in some cases a normal range of values is observed. In most cases of hepatic insufficiency the results of bilirubin and Van den Bergh tests show an elevation of values, and the icterus index is usually high. The various liver function tests ordinarily give abnormal findings in cases of marked hepato-cellular damage. Liver biopsy will establish the presence and type of liver disease.

The Lupus Erythematosus Syndrome.

A. J. Reiches (*Ann. Int. Med.*, April, 1957) presents the result of a survey of a group of 353 cases which began with cutaneous lesions of discoid *lupus erythematosus* and later developed the protean manifestations of systemic *lupus erythematosus*. The result of the survey strongly suggests that discoid *lupus erythematosus* and systemic (disseminated) *lupus erythematosus* are stages of the same disease entity. The information enumerated suggests that clinically the *lupus erythematosus* syndrome may be divided into (i) a localized discoid (cutaneous) phase, which is generally benign, and (ii) a systemic (disseminated) phase, which may or may not be associated with skin lesions. The two conditions are stages of the same disease entity. It is also apparent that the discoid (cutaneous) phase of the disease, when existing alone, may in some cases subsequently develop into the systemic type of *lupus erythematosus*.

High Blood Pressure.

H. B. Eiber (*Arch. Int. Med.*, May, 1957) presents a report on two studies, both of which were designed to evaluate chlorpromazine hydrochloride and *Rauwolfia serpentina* used in combination. The first study is an investigation of the combination in the treatment of 350 hypertensive patients, and the second represents a preliminary trial of the combination in 50 neuro-psychiatric patients. There is no safe effective single drug for the treatment of moderate and severe hypertension, and the drugs commonly used are unpredictable in action, and the side-effects numerous, annoying and not infrequently dangerous. An 18 months' study of the use of chlorpromazine-*Rauwolfia serpentina* whole crude root combination on 350 patients was carried out; 125 were mildly hypertensive, 125 were moderately hypertensive, and 100 were severely hypertensive. The study clearly demonstrated the potentiating properties of chlorpromazine on rauwolfia. This made possible a lower and therefore safer dose of both drugs, with results more effective than higher doses of either chlorpromazine or rauwolfia given alone. The results led the author to investigate the potentiating effect of chlorpromazine on other hypotensive agents. The conclusion was also drawn that the chlorpromazine-rauwolfia combination might be more effective than either of its two components in treating various neuro-psychiatric conditions.

Cortisone Therapy in Acute Viral Hepatitis.

R. S. Nelson (*Ann. Int. Med.*, April, 1957) discusses the present indications for cortisone therapy in acute viral hepatitis. The clinical features of five cases of severe viral hepatitis, one with coma, are presented; all the patients recovered without evidence of sequelæ. In the comatose patient, massive cortisone therapy was felt to play a deciding role in preventing death and promoting

healing. Accumulated experience in the treatment of acute viral hepatitis with cortisone leads to the conclusion that this hormone causes an accelerated drop in serum bilirubin levels, increase in appetite, loss of malaise, more rapid histological progress toward healing, and actual shortening of the duration of the disease, but that it is attended by increased danger of relapse. It is thus not recommended for routine therapy in this usually benign disease. A relatively small number of viral hepatitis patients will show evidence of severe disease. Criteria denoting sufficient severity for the employment of cortisone have been the following: (i) total serum bilirubin content of 15 milligrammes per 100 cubic centimetres or greater; (ii) inability to control anorexia, nausea and vomiting with intravenous glucose therapy over a period of three days; (iii) evidence of marked hepatic necrosis, as shown by disturbed sensorium, rapidly shrinking liver, *fator hepaticus* or coma. Cortisone should be used in the small number of acute viral hepatitis cases presenting undoubted evidence of severe disease. While proof that this hormone prevents chronic liver damage must await further experience, its effects are valuable in severe hepatitis and may be life-saving in massive necrosis with coma. Relapses, which may occur in 20% of cases, yield to reinstitution of therapy, and there is no indication that this complication leads to permanent damage.

Acute Renal Failure.

R. A. PALMER, E. HENRY AND J. EDEN (*Canad. M.A.J.*, July 1, 1957) discuss the results of the treatment of 54 patients suffering from acute renal failure. The failure in 37 cases was classified as due to ischæmic nephrosis. Obstetrical complications accounted for 19 of these, surgical shock for eight, crushing injury for six, transfusion reactions for two, and cardiac tamponade and retrograde pyelography for one each. There were 16 cases of nephrotoxic nephrosis, eight of these being due to poisoning with carbon tetrachloride, three to acute alcoholism, two to mercuric chloride, one to mushroom poisoning, and one to fluoride, the cause in one case being unknown. One case was due to acute glomerulonephritis. The authors state that analysis of their cases "strongly suggests that ischæmic nephrosis is precipitated by hypotensive shock". In the nephrotoxic group shock was not observed. The authors describe their methods of treatment. In the phase of onset emergency treatment for injury, poisoning, infection, shock and blood loss is employed. In the phase of oliguria it is necessary to maintain fluid and electrolyte balance and nutrition, and to treat the patients for anæmia and infection, and sometimes "provide radical relief of uræmia". Ideally, water output should be balanced by intake. To provide for unmeasurable fluid loss the authors allow 700 cubic centimetres for adult males and 500 for adult females each 24 hours, in addition to the equivalent of measured output. They regard the mild hyponatræmia of acute renal failure as a metabolic fault which is not corrected by the administration of sodium. They do not attempt to maintain a normal level of sodium in the serum. Bicarbonate replacement is attempted only if plasma values become very low. Foods rich in potassium are avoided as far as possible. Ion exchange resins were found useful for reduction of hyperkalæmia in mild cases. In severe cases hæmodialysis was employed by means of the Kolff artificial kidney. However, these were only cases in which retention of potassium appeared to be threatening to life. The authors used a diet rich in fat and carbohydrate and containing about 20 grammes of protein a day. Because of anorexia and nausea, feedings were given frequently in small palatable portions. But they found that even by this means it was seldom possible to give a diet of more than 1000 Calories in value. In some cases transnasal feeding was employed, with a constant drip. It was then possible to provide 1500 to 2000 Calories. In the phase of diuresis fluid balance was maintained until ordinary feeding was possible. Protein intake was restricted until the non-protein nitrogen level fell below 100 milligrammes per 100 cubic centimetres of serum. During the phase of diuresis the loss of electrolytes is a possible hazard. In the authors' experience the patient can be protected by means of the oral ingestion of sodium chloride and, if necessary, potassium chloride. Parenteral administration of these substances is occasionally required. The authors' experience is similar to that of Swann and Merrill, who found that the renal tubules rapidly regained their function of conserving electrolytes. Of the authors' 37 patients with ischæmic nephrosis, 21 died. Of the 16 with nephrotoxic nephrosis, six died. The patient with acute glomerulonephritis recovered. The cause of death is given as extrarenal in 18 cases, in seven of which it was pulmonary œdema.

Herpangina and Parotitis.

J. G. HOWLETT, F. SOMLO AND F. KALZ (*Canad. M.A.J.*, July 1, 1957) describe what they regard as a new syndrome of herpangina and parotitis. Herpangina, which was given its name by Zahorsky in 1920, is characterized by greyish-white papulo-vesicular lesions one to two millimetres in diameter with erythematous bases and situated on the anterior pillar of the fauces, on the soft palate and on the tongue. Several authors in the last century described the lesions as "pharyngeal herpes". The illness occurs in small epidemics, chiefly in children during the summer. In typical cases the onset is sudden, with fever, sore throat, dysphagia and anorexia. Headache and abdominal pain occur occasionally. The fever lasts two or three days, the herpetiform lesions four to six days. Coxsackie viruses have been obtained from the lesions. The authors believe that the occurrence of parotitis with the oral lesions has not been reported previously. They describe four cases, in which one or both of the parotid glands became swollen concurrently with the appearance of the lesions in the mouth. The authors point out that in the differential diagnosis of parotitis, in addition to mumps, consideration has to be given to such conditions as suppurative parotitis, Candida infections of the oral mucous membranes, uveo-parotid fever, inclusion body parotitis, *etc.* In their cases it was possible on clinical grounds to exclude all these conditions except mumps. However, none of the four patients had an increase of antibodies to mumps virus. Coxsackie virus group A was obtained from the saliva in all four cases and from the stools in two. Two other patients with parotitis and oral herpetiform lesions were seen; but Coxsackie virus could not be obtained from them, and the antibody titre for the virus of mumps increased significantly. The authors therefore regard these two cases as mumps; but they state that they are unable to explain the oral lesions.

Hiatal Hernia.

W. C. SEALY AND G. CARVER (*J.A.M.A.*, June 8, 1957) discuss sliding hiatal hernia. This implies the movement upward of the cardio-œsophageal segment into the thorax through the œsophageal hiatus. There may be intermittent aphagia, or symptoms associated with the reflux of digestive juices into the œsophagus. Fifty-one patients aged from 34 to 83 years (30 men and 21 women) were reviewed. Reflux œsophagitis occurred in 29 patients. The symptoms were indigestion, heartburn, epigastric distress referred to shoulder or back, and night regurgitation, causing pain several hours after retiring and often relieved by standing or by drinking milk or water. Episodic aphagia in 22 patients was associated with epigastric tightness, quickly or slowly relieved, after one or two swallows of food. It may last for hours and cause severe cramping. Gastro-intestinal bleeding occurred in 13 patients, and duodenal ulcer in eight. Treatment consisted in the Allison method of repositioning the cardio-œsophageal junction and repair of the hiatus in 22 patients. There were no deaths. Eleven patients needed œsophageal dilatation for fibrous stricture for some months after the operation. Symptoms recurred and further operations were necessary in several patients. A careful medical regime was necessary in many cases. Reflux which occurs at night is difficult to control. Raising the head of the bed eight inches, multiple feeding and the avoidance of large evening meals are advocated by the authors, though they admit that these measures were only moderately successful. The authors state that complicated œsophagitis with hiatal hernia should be treated conservatively.

Differential Diagnosis of the Pain of Coronary Heart Disease.

A. C. ERNSTENE (*Ann. Int. Med.*, February, 1957) discusses the differential diagnosis of the pain of coronary heart disease. The three most common clinical manifestations of coronary heart disease, in order of frequency, are *angina pectoris*, acute myocardial infarction and acute coronary failure. Each is characterized by pain in the chest due to anoxia of one or more areas of the myocardium. The pain is similar in location in all three, and the syndromes are distinguished from one another chiefly by the duration of the distress and by whether the anoxia is of sufficient severity and duration to result in the death of myocardial tissue. The author discusses in detail the way in which these three may be distinguished from each other, and from pain in the chest of non-cardiac origin.

The Wider View.

CHILD HEALTH IN CHINA.[1]

From April 10 to May 9, 1957, a group of 20 Australian doctors led by Dr. L. B. Cox visited China at the invitation of the Chinese Medical Association. I was a member of the group.

Visits were paid to the medical schools and hospitals in Canton, Hangchow, Shanghai, Peking and Hankow. Throughout the whole stay I was most courteously and hospitably received, and was given free access to see the work of the various medical schools and hospitals. I was able to move freely in any area in the cities. Interpretation was not a problem, for the majority of professional people in the medical schools understood and spoke English well, as many of them had studied in Western universities.

Any observations and opinions on preventive and curative pædiatrics and on the training of pædiatricians must of necessity be limited and interpreted with due consideration of the following factors. First, a month is a short time to assess a field as large as child health in so vast a country. Second, child health and illness can be completely studied only with a knowledge of the social background of the community. Appraisal of this background was difficult, as approximately 85% of the people live in the villages and only one half-day was spent seeing villages. Furthermore, the living conditions of families in the cities were studied only through open doorways. Third, any assessment of the present-day standards of child health and disease should take into consideration the standards of 10 and 20 years ago. Studies were not made during these periods and statistics are not available, so it is impossible to compare the present with the past.

The Problem of Child Health in China.

Chinese society is typical of most Asian societies, in that the large majority of the people are peasant farmers living in small villages and using methods of agriculture which are centuries old. Modern industry is rapidly developing in city areas. Three of the major problems of the Government are, first, feeding this enormous population of approximately 600,000,000 people with a birth rate of probably 47 per 1000, second, raising living standards by the development of modern industry, and third, education of the people. While food is probably just sufficient for the mass of the people, it is certainly inadequate for optimum nutrition. Housing and sanitation are primitive in all villages and in many parts of the cities, while education of the masses in the villages is backward.

The lot of the infant and child in China until recently was very hard, and many died of disease and starvation. Reliable statistics for maternal and infant mortality were not available until very recent years. I was informed by Dr. Shen, Director of Maternal and Infant Health of the Ministry of Health in Peking, that in 1948-1949 the infant mortality was probably 250 per 1000 live births in the villages and 150 per 1000 live births in many of the cities. In 1948 there were only 137 beds for sick children in the whole of China, no prophylactic immunization against the common infectious diseases and only an occasional infant and maternal welfare clinic.

The Communist Government is pledged to improve the care of mothers and children and is making a realistic approach to this immense problem. Aspects of this approach will be discussed under the headings of preventive pædiatrics, curative pædiatrics, hospitals and finance, and medical education.

Preventive Pædiatrics.

The Government and Ministry of Health are fully aware that the standard of child health is intimately bound up with general living standards, with food supply, housing, sanitation and education. These in turn depend on a stable expanding economy, which the Government is attempting to achieve by making a stable currency, by steady general industrial development and by improvement in agriculture. Dr. Shen considered that this policy was of prime importance in raising the standards of maternal and child health.

Dr. Shen also said that the training of midwives was of great importance in reducing maternal and infant mortality. Training of midwives in simple aseptic methods had been very effective in reducing puerperal sepsis and infant infections. All babies in the villages were delivered in the home by the village midwife, while in the cities, 55% of mothers in 1949 and 42% of mothers in 1956 were delivered in the home by midwives. At present 457,000 midwives were registered in 11 provinces in China and almost every village had a midwife. Training was elementary, and only the following three points were taught in an educational course lasting one week: first, midwives must wash their hands; second, finger-nails must be cut short; and third, a sterile dressing must be applied to the cord. Registration of births was now possible, as midwives could charge one yen for delivery of a baby and 50 cents for a cord dressing. Such dressings were obtainable from approved centres. Dr. Shen said that those simple measures had resulted in a considerable reduction of infant and maternal deaths. In Peking, the incidence of *tetanus neonatorum* had fallen from 7·2 to 0·5 per 1000 live births from 1949 to 1956, infant mortality from 117·6 per 1000 live births in 1949 to 44·5 per 1000 in 1955, and maternal mortality from 7% in 1949 to 0·2% in 1956. (See statistics.) Education of city mothers in infant and child care was promoted by women's organizations and health stations. Emphasis was on important simple measures. The four main themes taught were breast feeding, clean food preparation, elimination of flies and vermin, and the bringing of a sick child to hospital for examination. This simple educational programme was proving very effective.

The outstanding medical problems are nutritional disorders, infectious diseases and parasitic infections.

Nutrition.

Nutrition is a major concern of all pædiatricians. Assessment of the general nutritional state is not possible, for nutritional surveys and growth studies have not been carried out. On general observation, almost all the city children looked very well, with fat pink cheeks, bright eyes and abundant energy. By contrast, village children looked smaller, were thinner and did not seem to have the same vitality or healthy look as was the lot of the city child. Comparative weights of country and city infants and children were not available. Probably many children were deficient in protein, for nutritional anæmia of both the iron deficiency and the megaloblastic types was common, and œdema following subacute infections, especially infective diarrhœa, was often seen. I was informed that some of these latter children came from the surrounding country areas to the city hospitals for treatment. Cereal protein in the form of either rice or wheat provides the bulk of the protein for growing children in most of China. Milk and animal protein are scarce. Breast feeding of children is common up until the age of two years, rice or wheat gruel being the complementary feeding. Shortage of milk is a real problem in infant and child nutrition. Soya bean meal is being used as a substitute.

Infectious Diseases.

Infectious diseases such as diphtheria, smallpox, typhoid and paratyphoid fever, infective diarrhœa, infectious hepatitis, pertussis and tuberculosis are common, and overcrowding and poor sanitation are potent factors in their spread. The majority of families in both cities and in villages live in a single room, where all cooking, washing and eating are done. In villages and in many areas in cities excreta are collected in buckets for fertilization of the soil.

Immunization is a most important means of preventing many of these diseases, and a campaign is being developed. Manufacture and administration of vaccines to these enormous numbers of infants and children are a formidable task. Only part of the cities have been covered by the immunization campaign, while the majority of children in the villages have not been immunized. Accurate information on the overall pattern of immunization could not be obtained.

Parasitic diseases, such as ascaris infestation and schistosomiasis, and protozoal diseases such as malaria and amœbic dysentery are considerable problems, and are slowly being dealt with by control of the breeding grounds of the snail in which the schistosoma larvæ breed, and of the mosquito in which the malarial parasite lives. Changes in sanitation and hygiene will come only very slowly by raising of living standards and education.

Health Stations.

Health stations are being developed to promote infant and child care. These are established on a district basis in all

[1] Read at a meeting of the Pædiatric Society of Victoria on July 10, 1957.

large cities, but owing to shortage of nurses and doctors large sections of some cities do not yet have these clinics. Villages do not have such centres. Shanghai was planned to have 13 districts, but only eight are in operation; Peking was to have 11, and seven are in operation. Forty-one health stations are stated to be working at present, but in 1959, 595 will be functioning. They are staffed on the basis of one pædiatrician and three nurses for every 3000 children. All are responsible to the City Health Authority, with the exception of those which are supervised by the Department of Pædiatrics in the Medical School.

These centres have three main functions. First, they provide a centre for well baby care, the main emphasis of the work being on nutrition and infection. They are also responsible for immunizing the babies and children of the district. Second, they supervise the nurseries in the district. There are numerous nurseries in China, many of which are attached to factories in which mothers work. Thirdly, they provide a centre for treatment of sick children in the area and function at both a domiciliary and a clinic level. The well baby clinics are run on similar lines to our own clinics, while the clinic for the treatment of patients provides a service which in our country is usually carried out by the family doctor.

Two centres were inspected, both of which are situated in the better residential areas and would not be representative of the whole. The buildings are converted private dwellings, and are large and very adequate for the work. One centre covers a population of 24,000 and cares for 4500 infants and children aged up to seven years. Supervision of 59 nurseries, half of which are attached to factories, is also a function of this centre. Factory nurseries are frequently faced with problems of cross-infection from overcrowding. There are approximately 1100 live births per year in this area. Normal infants are visited or attend the clinic six times for the first year, three or four times for the second year, and after the second year, every six months. Infectious diseases are a common problem, especially measles and pertussis. In 1956 the clinic cared for 355 patients with measles by domiciliary visiting, and during 1957 it cared for 590. Immunization of premature and sickly babies against pertussis and morbilli is carried out by giving placental globulin in a dosage of 1·5 millilitres per kilogram of body weight. In addition the clinic is responsible for the care of all premature babies in a large adjoining area with a population of 425,000. The larger premature infants are nursed in the home, equipment being loaned to the mother, and the visiting nurse gives instruction.

Birth Control.

Birth control has now been officially authorized by the Government, owing to the rapidly rising birth rate. With raising of the material standard of living and control of some of the infections, the birth rate in Peking has risen steadily from 35 per 1000 in 1949 to 37 per 1000 in 1952 and to 47 per 1000 in 1956. It is assumed that similar rises have occurred in other cities, but the increase in the villages is not known. The Government realizes that this large population increase will seriously hamper any chance of raising living standards of the people as a whole. Propaganda on the advisability of limiting family size and on methods of contraception was widely disseminated in the visited cities. This information will be very difficult to spread in country areas, owing to the large number of uneducated peasants. Success of this scheme with the peasants will probably depend on the simplicity and reliability of the method taught.

Curative Pædiatrics.

The two major problems confronting the pædiatrician are, first, the large amount of minor illness, principally infective and nutritional in nature, and second, treatment of the seriously ill child. The first problem is being tackled by the health stations and the large out-patient departments attached to each of the children's hospitals. The type of work is very similar to that of our own casualty department. The second problem is being solved by construction of new children's hospitals, and now there are over 1700 beds for sick children. Planning and construction of these hospitals are basically sound, and erection takes place rapidly. One or two years at the most is the construction time of hospitals containing from 200 to 600 beds. At present, medical and nursing standards are below the best standards of the west. Well-trained medical personnel are few, and too few are being trained as nurses. Pædiatric nursing is not a recognized separate course. Laboratories are not well equipped and have too few personnel, the majority of whom are technicians. There are very few doctors or science graduates in any laboratory of the children's hospitals.

The three common disorders for which children require hospital treatment are respiratory infection, especially pneumonia, alimentary tract infections, and failure to thrive. Complications of pertussis, morbilli and streptococcal infections are also very common. Many patients have rheumatic fever and nephritis. Poor nutrition is the usual cause of an infant's failure to thrive, and often there is a complicating infection. Metabolic, endocrine and other unusual problems are not being investigated. Children presenting neurosurgical, cardiac and orthopædic problems are usually treated in adult clinics, and even then only the simpler and more easily defined problems are being tackled. The pressure of work required to deal with the large number of common infections and nutritional problems leaves little time to deal with unusual problems. Treatment of disease is conducted on routine western lines. There is little evidence that traditional Chinese methods are being used in pædiatrics.

Pædiatric Surgery.

Pædiatric surgery is just commencing, and two departments have been established, the first at Shanghai and the second at the Peking Children's Hospital. A third is being developed at Canton. The Shanghai clinic is well established and is carrying out excellent routine surgery. The surgery of intestinal obstruction is being especially studied, and the quality of work and results are excellent. I think that this centre will be an important one for training many of the young pædiatric surgeons that China needs.

Research.

Very little clinical research of any sort is being undertaken in children's disease. A few of the better centres have analysed hospital records to provide mortality and morbidity statistics, but even this elementary approach is not common. Dr. Chen in Peking was undertaking a study of megaloblastic anæmia, which was very common in infants. In just over 12 months she had personally seen 120 patients and investigated 66 of these in detail with bone marrow punctures. These patients were infants aged between six months and two years, mostly breast fed and predominantly from country areas, and three-quarters of them had associated iron deficiency. Response seemed best to vitamin B_{12}, although folic acid gave a fair response.

Dr. Su, at Shanghai, has carried out a study of the efficaciousness of antimony in the treatment of schistosomiasis in children. The study was uncontrolled, but suggested that potassium antimony tartrate was moderately efficacious.

Dr. Ma, at Shanghai, has been working on the problems of intestinal obstruction, which seem very common, especially intussusception. He has handled 600 patients with intussusception in five years, with a low mortality. These patients include 19 with strangulation and gangrene, and in this group there were only four deaths. Dr. Ma used barium reduction in cases of less than 24 hours' duration, provided the infant was in good condition and not suffering from shock. Reduction can be effected in approximately 70% of cases by his method.

Disease Patterns.

Disease patterns in different societies are often interesting subjects for comparison. Rheumatic fever and acute nephritis are common diseases in both the north and south. Chorea is an unusual manifestation, and only one or at the most, two cases per year are seen either in hospital or in the out-patient department.

Tuberculosis in all forms is very common, and the death rate is said to be considerable, although no figures are apparently available. B.C.G. vaccination is in progress, but its extent was impossible to assess. In Shanghai in 1956, 50,000 children were immunized, and in 1957 the figure would be in excess of 100,000.

Rickets is still quite common, especially in the north, and in Shanghai it is not infrequently observed in mild degree. Nutritional œdema associated with infective diarrhœa is frequently seen. Iron-deficiency anæmia is also common. The prevalence of rickets, nutritional anæmia and œdema following infection points to suboptimal nutrition for a considerable number of children.

Certain diseases are uncommon or have not been diagnosed. Cœliac disease is unknown. Its absence cannot be due to failure to ingest gluten, for wheat is the cereal consumed by many millions in the north. Fibrocystic disease of the pancreas is also unknown. Hæmolytic disease of the newborn is very rare, and it was stated that only 1% of

the Chinese women were Rh-negative. Cooley's anæmia occurs probably only in the south in the Canton area, and I saw a number of typical patients with well-established bone changes. Pædiatricians were carefully looking for this disease in clinics in northern China. Lack of knowledge or inexperience with cœliac disease or fibrocystic disease of the pancreas is not the reason why these diagnoses have not been established.

Medical Statistics.

Medical statistics were very difficult to obtain both for hospital mortality and morbidity and in matters relating to public health. The following were supplied by Dr. Shen, the Director of Infant and Maternal Health in the Ministry of Health, at a conference with approximately 30 other pædiatricians in Peking. Dr. Shen was the only person I met who seemed to have any real knowledge of mortality and morbidity rates.

Infant mortality.
- Peking:
  - 1949—117·6 per 1000 live births.
  - 1955—44·5 per 1000 live births.
- Shanghai:
  - 1952—81 per 1000 live births.
  - 1955—41 per 1000 live births.
- Country areas:
  - 1949—250 per 1000 live births.
  - 1955—46·2 per 1000 live births.

The figures for the country refer to areas immediately surrounding the cities. It is doubtful whether they are representative of the whole country.

Maternal mortality.
- Peking:
  - 1949—7%; half the deaths due to puerperal sepsis.
  - 1956—0·2%.

Tetanus neonatorum mortality.
- Peking:
  - 1949—7·2 per 1000 live births.
  - 1955—0·5 per 1000 live births.

The reduction of the maternal mortality and of the tetanus death rate in the newly born was attributed to midwife training in simple hygiene, as hand-washing, nail-cutting and cord-dressing.

Infantile diarrhœa mortality.
- Peking:
  - 1950—66·2 per 100,000.
  - 1954—7·0 per 100,000.

Diphtheria.
- Peking:
  - 1950—3·6 per 100,000.
  - 1954—0·1 per 100,000.
  - 1956—almost all children immunized; negligible incidence.

Hospital beds.
- Maternity:
  - 1949—304.
  - 1957—13,203.
- Children's:
  - 1949—137.
  - 1956—1644.

It is planned to have 10% of all hospital beds as children's beds.

Nurseries.
- Number of day nurseries:
  - 1950—317.
  - 1955—5000.
  - 1956—5310.
- Number of children:
  - 1950—34,000.
  - 1955—170,000.
  - 1956—180,000.

Kindergartens.
- Number of kindergartens:
  - 1950—779.
  - 1955—7124.
- Number of children:
  - 1950—140,325.
  - 1955—560,000.

Hospitals and Finance.

Large children's hospitals have been or are being built in most of the cities that were visited. In Peking a very modern hospital of 600 beds was built in 1952 and occupied in 1954. Between 8000 and 9000 children are treated as in-patients each year, and approximately 250,000 out-patient attendances are recorded each year. There are two other smaller pædiatric units in Peking, one of 60 beds, the other of 68 beds, at the Peking Union Medical College and the Chinese Union Medical College respectively. Both these departments are wards attached to a general hospital. In Shanghai the First Medical School had a new children's hospital with 190 beds built in 1952 and occupied in 1954. The out-patient department has approximately 100,000 attendances per year. The Second Medical School has a new children's block of 200 beds, 70 of which are surgical. There is a children's hospital of 170 beds in converted old buildings, and this is run by the municipality. Similar out-patient departments are attached to these hospitals. In Canton a new hospital was constructed in 1955, but the out-patient department is not yet completed. There are 270 beds, 50 of them surgical, and there are approximately 9000 admissions per year and 90,000 out-patient attendances per year. The Chung Chow Medical College has two ward units in different hospitals, the total number of beds being approximately 140. One is a new hospital, the other old. In both the facilities are quite good. One other pædiatric unit of 70 beds is situated in the Provincial Hospital of Canton. Smaller numbers of out-patients attend these smaller pædiatric departments. In Hangchow a new children's hospital of 300 beds is in the process of construction. The building is to be completed and occupied this year. The present hospital is in a series of old buildings, and there are approximately 150 patients in very overcrowded conditions. In Hankow a department of pædiatrics is attached to each of the two medical schools. There are approximately 70 beds in each department, with corresponding out-patient departments.

Medical treatment in the health centres and hospitals is not free for the majority of patients. A worker in a recognized trade pays health insurance each week, which entitles him and his family to free medical treatment. The clinic or hospital claims from the union for payment of the child's treatment. If the worker is a professional man, then his family is not insured and he has to pay for treatment. Thus the professional man, the labourer and the peasant all pay for their children's illnesses. These amounts are very variable and are estimated by assessment clerks. For hospital out-patient attendances from 10 cents to 100 cents per consultation are charged, while drugs are extra. In welfare clinics the charge is 5 to 10 cents per visit. Hospital budgets are covered in the larger part by patients' fees, the remainder being made up by the municipal health authority. In Peking, the Children's Hospital expenditure in 1956 was 2·2 million yen, and 1·8 million yen were collected from patients' fees, while in Canton Children's Hospital the running expenses were 540,000 yen, and 490,000 yen were collected from patients. In Shanghai similar figures were involved, and the proportion of money expended to money collected was similar. Hospital doctors and administrators consider that the people appreciate a service better if they have to make payment for it.

Medical Education.

There are 39 medical schools in China, many of which have been established since 1950, and most of them have a common basic pattern. At present the medical course is of five years' duration, including one year of internship. The first two years are devoted to the basic sciences, political philosophy being included, and the last two years to pathology and clinical work. The fifth year or intern year is almost entirely practical in wards and out-patient work. All students study pædiatrics and public health during their course. Some students who want to take up these two branches of medicine specialize as early as their third and fourth student years. While they do some general medicine in their third or fourth year, a larger part of their time is devoted to either of these specialities, and the intern year is spent either in a children's hospital or in a department of public health. In the specialized pædiatric course, third-year students are taught normal development (physical, mental and emotional) of the child together with methods of clinical examination. In the fourth year internal medicine is taught mainly in the child age group. The fifth year is a resident clinical clerkship, with supervision of eight to ten beds. Post-graduate work at resident level is carried on for a further three years for the better students. After this training, these students are absorbed into the medical schools as practising physicians and teachers. The students who do one or two years of internship are being drafted to work in health stations. A few students do general medicine first and then come back to pædiatrics, but these are in the minority. At present none of the pædiatricians leave medical school and enter private practice.

No doubt this short medical course with early specialization in pædiatrics has been designed to turn out as many doctors in as short a time as possible to cope with the immense problems of child health. There can be no question that training is far from ideal, and that the Chinese have compromised between the practical needs and the ideal. I think that they are well aware that the basic science course is too short, that specialization in student training gives a technical rather than a liberal view of medicine, and that the outlook for future teachers and research workers is being jeopardized owing to the absence of post-graduate training in basic sciences.

Special needs, national pride and enterprise have been driving forces in deciding the Chinese to compile their own text-books of medicine. In pædiatrics as in other branches, these books are being written in sections by a number of authors and edited by one or more people.

Conclusions.

1. The problem of raising the standard of child health in China is colossal, as there are approximately 200,000,000 children under the age of 15 years and a rising birth rate, which is now in the region of 47 per 1000.

2. The mass of the people are peasants, living in small villages with primitive housing, sanitation and hygiene. Food is just sufficient in quantity, but suboptimal in protein content.

3. Parasitic infestations and diseases of infection and nutrition are the major problems.

4. Preventive pædiatrics is soundly based, and living standards are being steadily raised by the development of agriculture and industry, and by education of the people in simple hygiene. Immunization against the common infectious diseases is now under way in the cities, but there is no reliable information about its extent in the country as a whole.

5. Curative pædiatrics is being dealt with by the development of health stations and new children's hospitals.

6. Trained nursing and medical staff are far too few to cope with the need at present.

7. Medical training of pædiatricians is not sound, but has been designed to meet the urgent need to provide a limited health service for the people.

8. Little or no research is being carried out in problems of children's disease.

9. The Chinese Government is making a sound and realistic approach to the enormous problem of child health.

Howard Williams,
Director of Clinical Research,
Royal Children's Hospital.

Melbourne.

British Medical Association.

SOUTH AUSTRALIAN BRANCH: ANNUAL MEETING.

The annual meeting of the South Australian Branch of the British Medical Association was held at the Verco Lecture Theatre, Institute of Medical and Veterinary Science, Frome Road, Adelaide, on June 26, 1957, Dr. M. E. Chinner, the President, in the chair.

Minutes.

On the motion of Dr. R. M. Holmes, seconded by Dr. R. N. Reilly, the minutes of the previous annual meeting were taken as read and signed as correct.

Annual Report of the Council.

The annual report of the Council was received and adopted on the motion of Dr. Sholto Douglas, seconded by Dr. R. Greenlees. The report is as follows:

At the annual general meeting of members of the Branch held on June 27, 1956, the following officers and members were elected for the ensuing year:

President: Dr. M. E. Chinner.

Vice-President: Dr. P. W. Verco.

Honorary Treasurer: Dr. B. S. Hanson.

Honorary Medical Secretary: Dr. Ronald Hunter.

Ordinary Members of Council: Group A, Dr. J. R. Barbour, Dr. G. T. Gibson, Dr. J. W. Sangster; Group B, Dr. R. M. Holmes (Clare) and Dr. H. R. Oaten (Mount Gambier).

At the first Council meeting of the new year, held on July 5, 1956, the following subcommittees were appointed:

Scientific: Dr. I. A. Hamilton and Dr. G. T. Gibson.

National Health Service: Dr. L. R. Mallen, Dr. C. O. F. Rieger, Dr. C. C. Jungfer and Dr. J. R. Barbour.

Ethics: Dr. C. O. F. Rieger, Dr. B. S. Hanson, Dr. P. W. Verco, Dr. M. T. Cockburn, Dr. G. L. Bennett and Dr. J. W. Sangster.

Parliametnary Bills: Dr. L. R. Mallen and Dr. C. O. F. Rieger.

Publicity: Dr. L. R. Mallen, Dr. C. O. F. Rieger and Dr. C. C. Jungfer.

Library: Dr. M. T. Cockburn, Dr. R. Hunter, Dr. J. M. Dwyer and the Honorary Treasurer (Dr. B. S. Hanson).

Salaries: Dr. L. R. Mallen, Dr. C. O. F. Rieger and Dr. C. C. Jungfer.

Medico-Pharmaceutical Liaison Committee: Dr. R. Hunter, Dr. C. O. F. Rieger and Dr. J. W. Sangster.

Tuberculosis Standing Committee: Sir Darcy Cowan, Dr. J. L. Hayward, Dr. K. S. Hetzel, Dr. H. D. Sutherland, Dr. J. G. Sleeman and Dr. P. S. Woodruff.

Standing Committee on Public Health: Dr. I. B. Jose, Dr. C. C. Jungfer, Dr. J. E. McCartney, Dr. G. Viner Smith and Dr. J. L. Stokes, together with a representative from the Department of Public Health, with power to coopt.

Standing Committee on Hospitals: Dr. I. B. Jose, Dr. R. H. Elix, Dr. R. G. de Crespigny, Dr. J. R. Magarey, Dr. L. R. Mallen and the President-Elect, with power to coopt.

The President, Immediate Past President, Vice-President, Honorary Treasurer, and the Honorary Medical Secretary are ex-officio members of all committees other than the Ethics and Standing Committees.

The President and Honorary Medical Secretary are ex-officio members of the Ethics and of all Standing Committees.

Monthly Scientific Meetings.

Scientific meetings have been held during the year as follows:

1956.—July 26: "Clinical Problems of Old Age"; speaker, Dr. J. H. Sheldon; discussion opened by Dr. Charles Duguid. August 30: "Hospital Infections"; speaker, Dr. J. E. McCartney; discussion opened by Dr. Eric Sims. September 27: "Poliomyelitis and the Salk Vaccine"; speakers, Dr. A. R. Southwood and Dr. R. R. Horton; discussion opened by Dr. J. S. Covernton. October 25: Clinical evening conducted by the Australian Laennec Society, South Australian Branch. November 29: "The Diagnosis of Pigmented Tumours of the Skin"; speaker, Dr. K. V. Sanderson; discussion opened by Mr. A. C. McEachern.

1957.—February 28: Clinical evening at the Adelaide Children's Hospital. March 28: Listerian Oration delivered by Mr. C. J. Officer Brown, of Melbourne, entitled "The Development of Heart Surgery". May 2: "Common Traumatic Injuries"; speaker, Mr. J. R. Barbour; discussion opened by Dr. J. R. Richards. May 30: Clinical evening arranged by the honorary medical staff, Queen Victoria Maternity Hospital. June 20: Clinical evening at the Repatriation General Hospital, Springbank.

Additional Lectures.

1956.—August 9: By courtesy of the Australian Laennec Society, South Australian Branch. September 4: By courtesy of the Australasian Association of Psychiatrists, South Australian Branch. October 16 and 18: By courtesy of the Royal College of Obstetricians and Gynæcologists, South Australian State Section.

1957.—March 5: By courtesy of the Australasian Association of Psychiatrists, South Australian Branch. March 22: By courtesy of the Post-Graduate Committee in Medicine. March 25: By courtesy of the Royal Australasian College of Surgeons, South Australian State Section. April 1 and 5: By courtesy of the Royal Australasian College of Surgeons, South Australian State Section. April 17: By courtesy of the Senior Medical Officer of the Rehabilitation Branch, department of Social Services.

ATTENDANCES AT COUNCIL AND COMMITTEE MEETINGS.

	Council.	Scientific.	National Health Service Sub-Committee.	Ethics.	Salaries.	Standing Hospital Committee.	Library.
BARBOUR, J. R.	9	—	1	—	—	—	—
BENNETT, G. L.	12	—	1	1	1	—	—
CHINNER, M. E.	12	1	1	1	1	1	—
COCKBURN, M. T.	4	—	—	—	—	—	—
GIBSON, G. T.	11	1	—	—	—	—	—
HAMILTON, I. A.	10	—	—	—	—	—	—
HANSON, B. S.	11	—	—	1	1	—	1
HOLMES, R. M.	10	—	—	—	—	—	—
HUNTER, R.	12	1	1	1	1	1	3
JUNGFER, C. C.	11	—	—	—	—	—	—
MALLEN, L. R.	10	—	1	—	1	—	—
OATEN, H. R.	7	—	—	—	—	—	—
RIEGER, C. O. F.	11	—	1	1	1	—	—
SANGSTER, J. W.	11	—	—	1	—	—	—
VERCO, P. W.	12	1	1	1	1	1	—
Meetings held up to June 6, 1957	12	1	1	1	1	1[1]	3

[1] Leave of absence until December 6, 1956. Dr. W. M. Irwin attended five meetings in the capacity of representative of the Editor of THE MEDICAL JOURNAL OF AUSTRALIA up to the date of relinquishing the position on December 31, 1956. His successor, Dr. J. M. McPhie, has attended three meetings.

[2] Also Dr. I. B. Jose, Dr. R. H. Elix and Dr. R. G. de Crespigny. Dr. J. M. Dwyer attended two of the three meetings of the Library Committee held during the year.

Membership.

The membership of the Branch is 902, the number of student associate members being 27.

The deaths of the following members throughout the year are recorded with regret: Dr. E. Flaum, Dr. D. Lekich, Dr. K. N. Steele, Dr. Bronte Smeaton (honorary life member) and Dr. S. Pearlman.

Representation.

Advisory Council on Health and Medical Services: Dr. L. R. Mallen.

British Medical Hall Company, Limited: Dr. B. S. Hanson, Dr. C. O. F. Rieger and Dr. F. L. Wall.

British Medical Association Annual Representative Meeting, Newcastle-upon-Tyne, 1957: Dr. Ivan S. Magarey, Dr. F. Boyd Turner and Dr. R. S. Wilkinson.

Central Council of the British Medical Association, London: Dr. Myles Formby.

Chiropody Board of South Australia: Dr. Nevill Wilson.

Dental Board of South Australia: Dr. Graham Bennett.

Federal Council of the British Medical Association in Australia: Dr. L. R. Mallen and Dr. C. O. F. Rieger.

Flying Doctor Service of Australia, South Australian State Section: Dr. J. M. Dwyer (chairman).

Florence Nightingale Memorial Committee: Dr. Dorothy Adams and Dr. Barbara Russell.

Medical Board of South Australia: Dr. C. O. F. Rieger.

"The Medical Journal of Australia" (Editor's Representative in South Australia): Dr. J. M. McPhie.

Mothers and Babies' Health Association: Dr. Neville Bickford.

Nurses' Board of South Australia: Dr. R. L. Thorold Grant.

St. John Ambulance Association: Dr. H. H. Hurst.

University Post-Graduate Committee in Medicine: Dr. R. M. Holmes, Dr. Ronald Hunter and the President *ex officio*.

World Medical Association: Dr. L. R. Mallen (Deputy Chairman of Council).

Sections Formed for Special Branches of Medical Knowledge.

Section of Anæsthetics.

Five ordinary meetings and the annual general meeting were held in the period covered by this report. The policy of concentrating on scientific papers at these meetings, inaugurated last year, was successfully continued. Five new members were elected, and the membership now numbers 37. The South Australian Branch this year was the host for the annual general meeting of the Australian Society of Anæsthetists. Papers read at this meeting, which reached a high standard, will be published in due course. The local executive consists of the following: Chairman, Dr. John Stace; Vice-Chairman, Dr. J. A. Ferris; Honorary Treasurer, Dr. E. C. Hallett; Honorary Secretary, Dr. John Muirhead; Past President, Dr. John Barker.

Section of Clinical Medicine.

There are 32 financial members of the Section.

At the annual general meeting, held on May 15, 1956, the following officers were elected: Chairman, Dr. J. L. Hayward; Honorary Secretary and Treasurer, Dr. Ivan Camens; Committee, Dr. H. Lander, Dr. J. M. Pedler and Mr. T. A. R. Dinning.

Meetings were held in the Chest Clinic on the second Tuesdays of May, August and November, 1956, and of March, 1957. The average attendance was 30 members. This is rather disappointing when the range of interest of cases presented is considered. Despite repeated attempts in the past, it has not proved possible to increase active interest in the Section.

The British Medical Association (Section of Clinical Medicine) Prize for 1956 was won by Miss V. J. Parks.

Section of Ophthalmology.

Seven meetings were held during the year. Membership was 16, and the average attendance at meetings was 10.

At the annual general meeting, held on March 13, 1956, the following officers were elected: Chairman, Dr. D. W. Brummitt; Vice-Chairman, Dr. J. H. Slade; Honorary Secretary and Treasurer, Dr. S. J. Goddard; Committeeman, Dr. F. J. B. Miller; Auditor, Mr. F. C. W. Dobbie.

In all, 18 cases were shown and discussed at various meetings.

In May, 1956, a special meeting was held to welcome Sir Norman Gregg, who came to Adelaide to deliver the Stirling Lectures during post-graduate week.

In July, 1956, another special meeting was held to welcome Professor François, of Ghent. After dinner at the Oriental Hotel, Professor François showed a film to illustrate his lecture on "Vascularization of the Optic Pathways".

In November, 1956, Dr. John Gordon addressed the Section on "Disturbance of Higher Visual Functions in Cortical Disease". This was a most interesting presentation of a subject not normally dealt with in text-books.

The remainder of the meetings were mostly devoted to examination and discussion of cases, and to the problems pertaining to the Ophthalmological Congress, which is to be held in Adelaide in 1958.

The Oto-Laryngological Society of Australia (South Australian State Section).

The first annual general meeting of the Oto-Laryngological Society of Australia (South Australian State Section) was held on Tuesday, March 13, 1956.

The following officers were elected: Chairman, Dr. R. M. Glynn; Vice-Chairman, Dr. A. S. de B. Cocks; Committeeman, Dr. S. Pearlman; Auditor, Mr. F. C. W. Dobbie; Secretary-Treasurer, Dr. R. N. Reilly.

One ordinary general meeting was held on May 9, when Dr. R. H. von der Borch presented a paper on "Impressions Gained during a Recent Trip Abroad". He dealt in particular with malignancy of the larynx and pharynx and recent advances in surgery of the temporal bone. In the former the tendency was towards more radical surgery. The extent of the surgical procedure was astounding. Treatment of chronic suppuration of the attic and mastoid did not show any fundamental changes, but the newer field of middle ear surgery had worthwhile possibilities.

Special general meetings were held in July, in preparation for the annual general meeting and the scientific meeting of the Society, which were held in Adelaide for the first time during the week commencing August 20. One of these special meetings was partly devoted to a discussion of the relationship of the Section to the Advisory Panel for Hard of Hearing Children, and to correspondence which had passed between the Section and the Minister of Education in this regard.

At the meeting of the Council of the Oto-Laryngological Society of Australia, which was held immediately preceding the annual general meeting of the Society, Dr. R. M. Glynn was reelected as President, Dr. A. S. de B. Cocks as Vice-President and Dr. R. N. Reilly as Secretary-Treasurer.

No further meetings of the Section were held after the annual general meeting.

At the second annual general meeting, held at the rooms of Dr. R. M. Glynn on Tuesday, March 26, 1957, the following officers were appointed: Chairman, Dr. A. S. de B. Cocks; Vice-Chairman, Dr. S. Pearlman; Committeeman, Dr. P. G. Jay; Auditor, Mr. F. C. W. Dobbie; State Representative, Dr. A. S. de B. Cocks; Secretary-Treasurer, Dr. R. G. Plummer.

Affiliated Local Associations of Members.

Northern Medical Association.

Four meetings have been held during the year.

The first was held at Clare, on August 5, 1956, when seven members attended. The speakers were Dr. L. G. Male ("Rehabilitation"), Dr. M. K. Smith ("Treatment of Fractures") and Dr. P. W. Verco ("Radiological Aspects of Fractures").

The second meeting was held at Blyth, on November 12, 1956, when 10 members attended. The speakers were Dr. Roland Beard, junior ("Gynæcological Problems"), and Dr. W. F. Joynt ("Obstetrical Problems").

The third meeting was held at Clare, on February 3, 1957, when 12 members attended. The speakers were Dr. M. E. Chinner ("Staphylococcal Infection"), Mr. I. B. Jose ("Inguinal Hernia"), Dr. R. N. C. Bickford ("Staphylococcal Infections in Children") and Dr. R. M. MacIntosh ("Obstetrical Problems").

The fourth meeting was held at Port Pirie, on May 5, 1957, when seven members were present. The speakers were Dr. J. H. Slade ("Common Eye Diseases") and Dr. R. G. Plummer ("Common Ear, Nose and Throat Problems").

South-Eastern Medical Association.

Four meetings were held during the year.

On July 21, 1955, at Penola, a clinical meeting was held, and after dinner Dr. Noel Bonnin spoke on "Recent Advances in Urological Diagnosis and Therapy".

On October 13, 1956, at Mount Gambier, seven members of the Society of Anæsthetists visited from Adelaide and conducted a symposium. Six visitors from western Victoria were also present. After dinner, reminiscences on medical practice in the early days in the south-east substituted for the unexpected absence of the invited speaker.

On February 16, 1957, at Mount Gambier, a clinical meeting was followed by dinner, and an address on "Medical Staphylococcal Conditions" was given by Dr. Melville Chinner, who was visiting as President of the Branch.

On May 4, 1957, at Naracoorte, the annual general meeting was held, and the following officers were elected for the year: President, Mr. T. E. G. Robertson; Vice-President, Dr. R. H. Jarvis; Secretary-Treasurer, Dr. D. N. Hawkins; Committee, Dr. D. J. Daly and Dr. D. Harris. A clinical meeting was held, and after dinner Dr. K. M. Bowden, Victorian Government Pathologist, spoke on "Sudden Death and Other Medico-Legal Problems". Dr. P. S. Woodruff attended and answered questions on tuberculosis survey work in the south-east.

An additional meeting was the refresher course held at Mount Gambier on June 23, 1956, when visiting lecturers were Dr. Alan Britten Jones ("Rectal Bleeding") and Dr. V. Y. Bockner ("Aspects of Trial Labour").

There are 31 financial members, and the average attendance at the meetings has been 19.

Upper Murray Medical Association.

There are 11 members of the Association. The office bearers are as follows: President, Dr. T. G. Kohler; Vice-President, Dr. J. G. Wilson; Secretary-Treasurer, Dr. G. Hasenohr from August, 1956 (formerly Dr. T. D. Manthorpe).

Activities were severely restricted by the disastrous River Murray flood, but two post-graduate week-ends were held, as follows: April 21 and 22, at Berri; the visiting lecturers were Dr. H. R. Gilmore, Dr. R. N. Reilly and Dr. G. T. Gibson. July 14 and 15 at Barmera; the visiting lecturers were Mr. Alan Lendon, Dr. D. W. Brummitt and Dr. J. E. Barker. Both meetings brought forth lively discussion, and the members all felt that they had benefited considerably from them. Three local meetings were held at Berri, Waikerie and Barmera during the year.

Yorke Peninsula Medical Association.

Three meetings were held during the year, and these were combined with post-graduate refresher courses.

On February 12, 1956, 11 members attended. The guest speakers were Dr. C. O. F. Rieger and Dr. E. F. Gartrell.

On July 8, 1956, eight members attended. The guest speakers were Dr. R. C. Angove and Dr. D. O. Crompton.

On October 21, 1956, 12 members and four visitors attended. Professor Andrew Claye, the Sims Black Travelling Professor for 1956, was the guest speaker, together with Dr. R. F. Matters.

The members of the Association total 14, and the office bearers are as follows: President, Dr. F. L. Thyer, Kadina; Secretary-Treasurer, Dr. A. J. de Bruin, Wallaroo.

National Health Service.

Pensioner Medical Service.

As the agreement in force between the Federal Council and the Commonwealth Government for the provision of medical services to the pensioner group expired in October, 1955, the Council sought the views of members of local associations and metropolitan suburban groups regarding the future of the service. In brief, the view of these members was that they were still desirous of continuing to render concessional services to the indigent section of the community, but asked the Federal Council to continue to press for a new standard of remuneration on their behalf. The Federal Council was informed accordingly. As these views coincided with those held by members of the other Branches, the Federal Council again urged upon the Minister the need for increasing the present fees to a more realistic level, and negotiations to this end are still proceeding with the Minister.

Medical Benefits Scheme.

The *National Health Act* is still experiencing some minor difficulties, which it was expected would follow the implementation of legislation of such far-reaching implications.

Possibly the strongest criticism of the scheme is bound up with the question of the rebates received for some of the items set out in the schedule of benefits, which are recognized as being anomalous in some respects. A further list of these drawn up by the New South Wales Branch has been submitted to the Minister, and it remains to be seen whether he will accept this advice.

Another cause for concern is the fact that voluntary organizations have been forced to increase their rates of contribution, owing to the increased number of professional services given by doctors. This tendency is not confined to South Australia, but rather to the Commonwealth as a whole. This, however, is not unexpected, as the insured patient is now in the position of asking for services which he might not otherwise have requested if the greater proportion of his account was not being met by voluntary insurance. There is a natural tendency to consult the doctor more frequently, and although this promotes the early diagnosis of disease, which is surely warranted from the medical

BRITISH MEDICAL ASSOCIATION (SOUTH AUSTRALIAN BRANCH).

Balance Sheet as at December 31, 1956.

LIABILITIES.	£ s. d.	£ s. d.
Sundry Creditors		499 16 10
General Fund:		
Balance, January 1, 1956	8,752 18 1	
Add Net Surplus for year	608 19 7	
Add Transfer from General Fund	805 0 0	
	10,166 17 8	
	£10,666 14 6	

ASSETS.	£ s. d.	£ s. d.
Fixed Assets at Cost, *less* Depreciation:		
Furniture	1,839 12 3	
Delineascope and Projector	5 6 8	
Lister Medals	2 0 0	
		1,846 18 11
Current Assets:		
British Medical Hall Company, Limited—Shares at Cost	4,102 10 0	
Australasian Medical Publishing Company Limited:		
5% Debentures	30 0 0	
3½% Debentures	2,600 0 0	
Advance not converted	88 3 1	
		6,820 13 1
Stocks on Hand	421 1 7	
Sundry Debtors	841 11 7	
		1,262 13 2
Cash at Bankers:		
National Bank	280 2 7	
Commonwealth Savings	124 4 6	
Savings Bank of South Australia	316 14 9	
Savings Bank Library	1 18 6	
Cash in Hand	13 9 0	
		736 9 4
		£10,666 14 6

Special Funds and Investments.

	£ s. d.	£ s. d.
Listerian Oration Fund:		
Balance, January 1, 1956	409 3 7	
Add Net Income	8 14 9	
		417 18 4
Frank S. Hone Memorial Fund:		
Balance, January 1, 1956	689 8 9	
Add Interest	22 12 4	
		712 1 1
Trent Champion De Crespigny Memorial Fund		
Balance, January 1, 1956	280 10 10	
Add Interest	7 2 4	
		287 13 2
British Medical Hall Building Fund:		
Balance, January 1, 1956	1,021 13 7	
Add Interest, Donations	332 13 4	
	1,354 6 11	
Less Tranfer General Fund	805 0 0	
		549 6 11
		£1,966 19 6

	£ s. d.	£ s. d.
Listerian Oration Investments:		
Electricity Trust Debentures	310 0 0	
Savings Bank of South Australia	107 18 4	
		417 18 4
Frank S. Hone Memorial Fund:		
Commonwealth Bonds, 3½%, 1959	50 0 0	
South Australian Gas Company Debentures	300 0 0	
E.T.S.A. Debentures	250 0 0	
Savings Bank of South Australia	112 1 1	
		712 1 1
Trent Champion De Crespigny Memorial Fund:		
Savings Bank of South Australia		287 13 2
British Medical Hall Building Fund:		
Commonwealth Bonds, 3½%, 1960	200 0 0	
Savings Bank of South Australia	29 1 11	
Commonwealth Savings Bank General Account	320 5 0	
		549 6 11
		£1,966 19 6

F. C. W. DOBBIE, Secretary. B. S. HANSON, Honorary Treasurer.

We hereby report that we have examined the Books and Accounts of the South Australian Branch of the British Medical Association Incorporated for the year ended December 31, 1956. In our opinion the above Balance Sheet, together with the Statements of the Special Funds, are properly drawn up so as to exhibit a true and correct view of the affairs of the Branch, as at the above date, according to the best of our information, the explanations given to us, and as shown by the Books produced.

Adelaide,
April 30, 1957.

ANNELLS, TILLEY, HUNWICK AND CO.,
Chartered Accountants (Aust.).

aspect, nevertheless there has been an increased demand on the funds of approved organizations.

Experience has shown that the number of services rendered by general practitioners under Item I (1) comprises the greater proportion of the services for which rebates have been given. The percentage of population covered by means of voluntary insurance is steadily increasing, and there are no reasons for supposing that over-visiting has occurred to any great extent.

The average cost per service in South Australia is next to lowest in the Commonwealth, and the recent adoption by some organizations of a new table of benefits, under which there are no exclusions for preexisting illnesses after two years' continuous membership, will do much to remove one of the strongest criticisms of the medical benefits scheme, that patients with chronic ailments cannot obtain voluntary insurance cover.

Local Medical Officers to the Repatriation Department.

On March 20, 1957, all local medical officers to the Repatriation Department in this State were circularized by means of a letter under the signature of the President, asking their views on a matter concerned with their present standard of remuneration. This action was taken at the request of the Federal Council. The views of members were later correlated and forwarded to the Federal Council, it being stressed, however, that in the event of the Federal Council finding it necessary to take firm action with the department, no hardship should be inflicted on the returned serviceman by reason of any step taken in this regard.

BRITISH MEDICAL ASSOCIATION (SOUTH AUSTRALIAN BRANCH).

Income and Expenditure Account for the Year Ended December 31, 1956.

1955. £		£	s.	d.
2,350	To Staff Salaries and Superannuation	2,424	14	7
349	„ Postages	380	8	10
454	„ Stationery and Printing	453	19	11
75	„ Telephone and Telegrams	33	6	5
170	„ Rent	100	0	0
29	„ Legal Expenses	12	12	0
15	„ Audit Fee	15	15	0
413	„ General Expenses	327	13	5
122	„ Entertainment	138	19	5
219	„ Depreciation	204	19	9
194	„ Net Surplus for year	608	19	7
		£4,701	8	11

1955. £		£	s.	d.	£	s.	d.
7,411	By Gross Subscriptions:						
5,578	City	6,141	12	3			
1,781	Country	1,855	7	7			
51	Students	35	3	3			
					8,032	3	1
3,138	*Less* Deductions:						
1,365	British Medical Association, London	1,367	2	0			
391	THE MEDICAL JOURNAL OF AUSTRALIA	472	18	9			
831	Federal Council	1,017	10	0			
550	Library	600	0	0			
					3,457	10	9
4,273	„ Net Subscriptions				4,574	12	4
105	„ Interest				126	16	7
					£4,701	8	11

Workmen's Compensation Act: Insurance Medical Clinics.

Following the extraordinary general meeting of members of the Branch held on March 22, 1956, members were advised in March that at a meeting of the Federal Council held in February, 1957, the following policy was adopted by it regarding the treatment of patients at these clinics. This was as follows:

> That the Federal Council disapproves of the staffing by members of the Association of a clinic established by an insurance company for any purpose other than the emergency treatment and inspection of the injured worker.

Members were also informed that the Branch is bound by Federal Council policy, and that it must therefore accept this ruling. They were assured, however, that the Council would continue to safeguard their individual rights concerning the treatment of these cases, within the framework of this Australia-wide policy.

Safety Helmets for Motor-Cyclists.

In common with other sections of the community, the Council became alarmed at the increasingly large number of motor vehicular accidents, and more particularly where motor-cyclists and their pillion passengers were involved. In a letter sent to the City Coroner in February last, it urged the compulsory wearing of safety helmets by all motor-cyclists and their passengers, as a means of preventing the needless number of deaths through cerebral injuries in this particular group of road users. A copy of this letter was also sent to the Press.

The response from public authorities and organizations concerned with road safety was encouraging, all of whom indicated their agreement with this proposal, excepting that voluntary action was first advocated before making the wearing of safety helmets compulsory. That this publicity has met with a degree of success is indicated by the increasingly large number of motor-cyclists who may now be seen on the roads wearing some type of safety helmet.

Company Formation by Medical Practitioners.

At the last meeting of the Federal Council, held in February, 1957, the following resolution was adopted regarding the above matter:

> That no objection be taken to medical practitioners forming themselves into companies for the practice of medicine, provided that the following conditions are fulfilled, *viz.*:
>
> 1. Membership of the company shall be confined to medical practitioners actively engaged in medical practice.
>
> 2. No member shall practise his profession as a member of a company or conduct his practice in association with such company, unless the control of the company is at all times completely in the hands of registered medical practitioners.
>
> 3. The governing director shall at all times be a registered medical practitioner.

This subject has engaged the attention of the State Council on several occasions, and expert advice has been obtained from both the solicitor to the Branch and the auditor respectively. It seems clear that the so-called advantages of company formation are not as great as the Council had been led to believe, and that, in fact, there are many serious disadvantages in this procedure, more especially in so far as the relationship between medical practitioners and their patients is concerned.

At a meeting of the Branch Council, held on June 6, 1957, it was unanimously resolved that in the light of information before it, no action be taken to either rescind or amend the existing by-laws of the Branch in this regard. These are repeated hereunder for the information of members.

> 36A (1). No member shall conduct his professional practice through or by means of a limited liability company if any of the shares of the company or any interest in any such shares are or is held by or on behalf of or in trust for any person who is not a legally qualified medical practitioner.
>
> 36A (2). Even though the whole of the issued shares of a limited liability company are bona fide held by legally qualified medical practitioners for their own benefit, the conduct of his practice by a member through or by means of such company is considered to be undesirable and contrary to the interests of the profession as a whole because it is detrimental to the establishment and maintenance of a proper relationship between the practitioner and his patient.

In spite of the foregoing, however, it should be noted that there is no objection to medical practitioners being associated with lay persons in the formation of companies for the purpose of acquiring properties in which such practitioners may carry on their practices.

Frank S. Hone Memorial Prize.

The prize was awarded on the results of the 1956 examinations for the degrees of Bachelor of Medicine and Bachelor of Surgery to Jennifer Brown.

Welcome to New Graduates.

Following the usual custom, the candidates who successfully completed the final examinations for the degrees of M.B., B.S. were entertained at "Newland House" at afternoon tea on November 29, 1956. The President welcomed them to the ranks of the medical profession and wished them success in their chosen career.

Federal Council of the British Medical Association in Australia.

The Federal Council met in Melbourne on August 27 to 30, 1956, and in Sydney on February 22 to 25, 1957. The South Australian Branch was represented at these two meetings by Dr. L. R. Mallen and Dr. C. O. F. Rieger.

The World Medical Association.

Dr. L. R. Mallen, who was recently appointed Vice-Chairman of Council of the World Medical Association, attended meetings of the Association held at Cuba in October, 1956, and at Oslo in April, 1957.

Retirement of Dr. Mervyn Archdall as Editor of "The Medical Journal of Australia".

In March the Council learned with deep regret that ill health had necessitated the retirement of Dr. Mervyn Archdall from the position of Editor of THE MEDICAL JOURNAL OF AUSTRALIA, a position which he had occupied for many years. A letter was sent to Dr. Archdall expressing appreciation of his services to the Association and the whole of the medical profession and the hope that he will enjoy a well-earned leisure.

Dr. Ronald Winton has been appointed Acting Editor of the journal.

Retirement of Dr. F. B. McCann as Deputy Director of Health for South Australia.

In order to record its appreciation of the services rendered by Dr. F. B. McCann to members of the medical profession throughout his eight years as Deputy Director of Health for South Australia, the Council held a late afternoon party in his honour at "Newland House" on Thursday, March 21, 1957. Dr. McCann served the profession well in a position which called for the exercise of a considerable amount of tact and impartiality.

Honours and Awards.

The Council tenders its congratulations to Dr. G. Wien Smith, who has been admitted to the grade of Serving Brother in the Venerable Order of St. John of Jerusalem, and to the General Secretary of the Federal Council, Dr. John Hunter, on whom Her Majesty the Queen has been pleased to bestow the honour of Companion of the Most Distinguished Order of St. Michael and St. George.

The foregoing represents some of the more important matters which have been considered by the Council during the year. As far as our relations with the public are concerned, it is to be regretted that a number of complaints against medical practitioners have been made in which it has been alleged that there has been a refusal to attend them, or the members of their family, when requested to do so in cases of emergency. Some of these complaints, unfortunately, seem to indicate that there is a definite tendency on the part of some practitioners to lose sight of the moral side of medical practice and of the responsibility it entails in giving a high standard of service to the public. The medical profession has an outstanding record of public service to its credit. Let us all do our utmost to preserve this tradition.

(Signed) M. E. CHINNER,
President.

FINANCIAL STATEMENT.

The financial statement, published herewith, was adopted on the motion of Dr. B. S. Hanson, the Honorary Treasurer, seconded by Dr. Dr. C. O. F. Rieger.

ELECTION OF OFFICE BEARERS.

Dr. M. E. Chinner declared Dr. P. W. Verco elected to the office of President for the ensuing twelve months and invested him with the badge of office. Dr. Verco thanked the members for his election.

Dr. Verco then announced the election of office bearers for the ensuing year.

Vice-President: Dr. C. C. Jungfer.

Honorary Treasurer: Dr. B. S. Hanson.

Honorary Medical Secretary: Dr. Ronald Hunter.

Members of Council: Group A—Dr. R. N. C. Bickford, Dr. R. G. de Crespigny, Dr. R. M. Glynn. Group B—Dr. F. L. Thyer (Kadina).

On the motion of Dr. B. S. Hanson, seconded by Dr. C. O. F. Rieger, Messrs. Annells, Tilley, Hunwick and Company were appointed auditors for the ensuing year.

PRIZE FOR CLINICAL MEDICINE.

The chairman of the Section of Clinical Medicine, Dr. Mark Bonnin, presented to Dr. Chinner the winner of the Section of Clinical Medicine Prize, Miss Veronica Parks. Dr. Chinner congratulated Miss Parks on having won the prize, and handed her a certificate of the award.

RETIRING MEMBERS OF COUNCIL.

A vote of thanks to the retiring members of Council—Dr. M. T. Cockburn, Dr. Ian Hamilton, Dr. R. M. Holmes and Dr. G. L. Bennett—was passed on the motion of Dr. R. M. Glynn, seconded by Dr. K. S. Hetzel.

RETIRING PRESIDENT'S ADDRESS.

Dr. M. E. Chinner read his retiring president's address entitled "Physician, Heal Thyself" (see page 565).

Vote of Thanks.

A vote of thanks to Dr. Chinner for his address was passed on the motion of Dr. A. Britten Jones, seconded by Dr. C. C. Jungfer.

SIR CHARLES HASTINGS AND CHARLES OLIVER HAWTHORNE CLINICAL PRIZES, 1958.

THE Sir Charles Hastings Clinical Prize Competition was established by the British Medical Association for the promotion of systematic observation, research and record in general practice. The competition has been extended by the addition of a second prize known as the Charles Oliver Hawthorne Clinical Prize. The following are the regulations governing the awards:

1. The Sir Charles Hastings Clinical Prize, consisting of a certificate and £75, will be awarded for the best entry.

2. The Charles Oliver Hawthorne Clinical Prize, consisting of a certificate and £50, will be awarded for the second best entry.

3. Any member of the Association who is engaged in general practice is eligible to compete for these prizes.

4. The work submitted must include personal observations and experiences collected by the candidate in general practice, and a high order of excellence will be required. If no work entered is of sufficient merit, no award will be made. Candidates in their entries should confine their attention to their own observations in practice rather than to comments on previously published work on the subject, though reference to current literature should not be omitted when it bears directly on their results, their interpretations and their conclusions.

5. Essays, or whatever form the candidate desires his work to take, must be sent to the Secretary, British Medical Association, British Medical Association House, Tavistock Square, London, W.C.1, not later than December 31, 1957.

6. A prizewinner in any year is eligible for an award of either of the prizes in any subsequent year. A study or essay that has been published in the medical Press or elsewhere will not be considered eligible for a prize, and a contribution offered in one year cannot be accepted in any subsequent year unless it includes evidence of further work.

7. If any question arises in reference to the eligibility of the candidate or the admissibility of his or her entry, the decision of the Council on any such point shall be final.

8. Preliminary notice of entry for this competition is required, on a form of application to be obtained from the Secretary.

9. Each entry, which should be unsigned, must be typewritten or printed on one side of the paper only and accompanied by a separate note of the candidate's name and address.

10. No definite limits are laid down as to the length of the work submitted, but the Council anticipates that for this competition 3000 to 10,000 words would be suitable.

11. Inquiries relative to the prizes should be addressed to the Secretary.

PRIZE ESSAY COMPETITION FOR PROVISIONALLY REGISTERED PRACTITIONERS, 1958.

THE Council of the British Medical Association is prepared to consider the award, in 1958, of prizes to provisionally registered practitioners for essays submitted in open competition.

The subject of the essay is "What I Have Learned from Contact with the Patient's Relatives".

Any provisionally registered practitioner in the pre-registration year at the time of submission of the essay is eligible to compete for a prize. No study or essay that has previously appeared in the medical Press or elsewhere will be considered eligible for a prize.

If any question arises in reference to the eligibility of a candidate or the admissibility of his or her essay, the decision of the Council of the British Medical Association shall be final. Should the Council decided that no essay entered is of sufficient merit, no award will be made.

At least one prize of £50 is offered. In determining the number of prizes to be awarded, the Council will take into consideration the number and standard of essays received.

Essays must not exceed 5000 words, and must be typewritten or legibly written in the English language on foolscap paper, on one side only, must be unsigned, and must be accompanied by a note of the name and address of the entrant. Notice of entry for this competition is necessary, and a form of application can be obtained from the Secretary of the British Medical Association.

Essays must be forwarded so as to reach the Secretary of the British Medical Association not later than January 31, 1958.

Inquiries relative to the competition should be addressed to the Secretary, British Medical Association, British Medical Association House, Tavistock Square, London, W.C.1.

PRIZE ESSAY COMPETITION FOR MEDICAL STUDENTS, 1958.

The Council of the British Medical Association is prepared to consider the award, in 1958, of prizes to medical students for essays submitted in open competition.

The subject of the essay is "The Value of Observation in the Training of Medical Students".

Prizes of £25 will normally be offered, but the Council will take into consideration the number and standard of the essays received when determining the awards to be made.

Any medical student who is a registered member of a medical school in the United Kingdom, Commonwealth and Empire or the Republic of Ireland at the time of submission of the essay is eligible to compete for a prize.

Previous prizewinners are eligible for a second award.

If any question arises in reference to the eligibility of a candidate or the admissibility of his or her essay, the decision of the Council of the British Medical Association shall be final. Should the Council decide that no essay entered is of sufficient merit, no award shall be made.

Essays must not exceed 5000 words, and must be typewritten or legibly written in the English language on foolscap paper, on one side only, must be unsigned, and must be accompanied by a note of the name and the medical school of the entrant. Notice of entry for this competition is necessary, and a form of application can be obtained from the undersigned.

Essays must be forwarded so as to reach the Secretary of the British Medical Association not later than January 31, 1958.

Inquiries relative to the competition should be addressed to the Secretary, British Medical Association, British Medical Association House, Tavistock Square, London, W.C.1.

THE NATHANIEL BISHOP HARMAN PRIZE, 1958.

The Council of the British Medical Association is prepared to consider the award of the Nathaniel Bishop Harman Prize for research in hospital practice in the year 1958. The value of the prize is approximately £100.

The purpose of the prize is the promotion of systematic observation and research by consultant and specialist staff and senior registrars of hospitals not attached to recognized medical schools. It will be awarded for the best report on original clinical research in a form suitable for publication. The work submitted must include personal observations and experiences collected by the candidate in the course of his practice. A high order of excellence will be required. No report or study that has previously been published in the medical Press or elsewhere will be considered eligible for the prize.

Any registered medical practitioner on the staff of a hospital in Great Britain or Northern Ireland, who is not a member of the staff of a recognized undergraduate or postgraduate medical school, is eligible to compete.

If any question arises in reference to the eligibility of a candidate or the admissibility of his entry, the decision of the Council shall be final.

Should the Council of the Association decide that no entry submitted is of sufficient merit, the prize will not be awarded in 1958, but will be offered again the year next following this decision, and in this event the money value of the prize on the occasion in question shall be such proportion of the accumulated income as the Council shall determine.

Each entry, which must be typewritten or printed in the English language, should be unsigned, but accompanied by a note bearing the name of the writer. It is suggested that reports should be between 3000 and 10,000 words.

Candidates are required to complete an entry form, a copy of which can be obtained from the Secretary. Reports and entry forms must reach the Secretary, British Medical Association House, Tavistock Square, London, W.C.1, not later than January 31, 1958.

Inquiries relative to the prize should be addressed to the Secretary.

MIDDLEMORE PRIZE, 1958.

The Middlemore Prize, which consists of a cheque for £50 and a certificate, was founded in 1880 by the late Richard Middlemore, F.R.C.S., of Birmingham, to be awarded for the best essay or work on any subject which the Council of the British Medical Association may from time to time select in any department of ophthalmic medicine or surgery.

The Council of the British Medical Association is prepared to consider an award of the prize in the year 1958 to the author of the best essay on "Local Antibiotic Treatment in External Ocular Disease".

Notice of intention to enter for the competition should be made on the appropriate entry form, copies of which can be obtained from the Secretary, British Medical Association, British Medical Association House, Tavistock Square, London, W.C.1.

Essays must reach the Secretary on or before January 31, 1958. Each essay must be unsigned and accompanied by a slip containing the name and address of the author. Previous prizewinners are not precluded from entering. If no essay of sufficient merit is submitted, the prize will not be awarded in 1958, but will be offered again in the following year.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

THE MELBOURNE HOSPITAL.

[From the *Australasian Medical Gazette*, September, 1886.]

The sanitary state of the Melbourne Hospital as shown by the evidence given at the various inquests lately held on the bodies of several patients who died in its wards is unquestionably terribly bad.

We think the finding of the jury a right one and their opinion as expressed in the following portion of their verdict, "The jury from the mass of evidence brought before them are unanimously of opinion that the hospital is in a thoroughly insanitary state, is a constant menace and injury to the sick poor, and calls for the immediate attention of the authorities with a view to its removal and rebuilding in a more suitable place. They also urge the Government, the Committee, and the public, to take immediate action as they consider the hospital a disgrace to the city of Melbourne", fully justified by the evidence. The whole of the medical men examined are practically agreed in urging the necessity for immediate change: some are more pronounced in their opinions than others, but even those who speak with least decision in the matter, give evidence which, but for the more strongly expressed opinions of the more influential practitioners, would be sufficiently startling. Mr. Fitzgerald's

vigorous and conscientious action in refusing to perform another operation in the present hospital has been the cause of the present public attention. This gentleman's opinion has been strongly endorsed by Mr. Girdlestone his surgical colleague, by Dr. Robertson and Professor Allen. Opinion seems only to be divided amongst the whole profession in Melbourne on the point whether the new hospital (which is unanimously admitted to be immediately necessary) should be erected upon the present or upon a new site. We think that, taking into consideration the value for commercial purposes of the ground in Lonsdale Street, and the fact that the space is really insufficient for a very large hospital, a new site should be chosen and that in the University grounds is the most fitting place.

Correspondence.

A CASE FOR DIAGNOSIS.

SIR: I should be grateful if any of your readers could cast light on the following case.

I was rung up from a distant cattle station for advice concerning an aboriginal baby, aged seven months, who was described as very seriously ill and "panting". An ambulance was sent to fetch the baby, who died before she reached hospital. The mother's description of the illness was vague. The baby had apparently been ill for four days with a bad cold, fever, cough and rapid breathing. There was no rigidity of the neck. The baby had been breast-fed and had received no other food since it was born.

At autopsy the first impression was of a healthy, fat child, with a general appearance of Frölich's syndrome; but further examination showed that the musculature was poor, the skin hanging around in folds. The abdominal wall was composed mainly of fat. The heart, lungs, spleen, liver and kidneys were normal. The gall-bladder was distended with bile. The thymus was rather large and adherent to the sternum. The pharynx was not inflamed, but a little mucus had collected on the posterior wall. The stomach and intestines were almost empty, with no inflammation of the mucous membranes. The bladder was not distended. No tubercles or inflammatory exudate were found at the base of the brain. The lateral sinuses were not distended. There were some small, neglected ulcers, possibly yaws, on the legs.

From these findings the cause of death was certified as "ill-defined disease". The possible causes of death considered were: (i) influenza, (ii) septicæmia, (iii) meningitis, (iv) "malnutrition".

The question upon which I should specially appreciate advice is: Are wholly breast-fed aboriginal babies subject to any special febrile fulminating diseases of a nature difficult to detect on post-mortem examination?

Yours, etc.,

S. V. HUMPHRIES,
Medical Officer-in-Charge,
Tennant Creek Hospital.

Tennant Creek,
Northern Territory,
September 20, 1957.

A NOTE ON THE OBSERVATIONS OF HEWSON AND FALCONAR ON THE MORPHOLOGY OF RED BLOOD CELLS, WITH AN ACCOUNT OF THEIR THEORY OF BLOOD FORMATION.

SIR: In a recent number of the Journal (September 21, 1957) you kindly published an article of mine on the experiments and theories of Hewson and his associates. Since submitting the article for publication, I have had the opportunity of seeing a copy of "Some Milestones in the History of Hematology" by Camille Dreyfus, M.D., which was discussed in "Current Comment" (the Journal, September 7, 1957), and I find that some of the experiments dealt with in my article are also discussed there. The two accounts have a slightly different approach to the subject, and it is worth while reading them in conjunction with each other. Dreyfus obtained his material from an edition of Hewson's experiments published in 1846 by the Sydenham Society of London, and his book contains quotations of passages from that work and reproductions of some of the diagrams and pages of text. However, he did not discuss Hewson's theory of blood formation, and he made no mention of Falconar's part in the experiments.

Although he himself gave all credit to Hewson for the discoveries he described, and presumably for the theory put forward, Falconar seems to have been associated with the work at all stages, and he repeated all the relevant experiments before publishing the results. I think, therefore, that on the face of it, he should be regarded as a partner in Hewson's researches. Throughout my article I have referred to the researches as if this were so.

In conclusion, it is worth mentioning that the material for my article was obtained from a copy of the 1777 edition in the possession of the Museum Section of the Library of the Medical Society of Victoria.

Yours, etc.,

M. L. VERSO.

4 Moorhouse Street,
East Camberwell,
Victoria.
September 27, 1957.

PEPSINIZED GRASS POLLEN IN THE TREATMENT OF HAY FEVER: A FURTHER REPORT.

SIR: With reference to the use of pepsinized grass pollen in the treatment of hay fever, Dr. Colton and Professor Robson's article of September 7 unfortunately cannot be taken as conclusive because the control substance used was papaverine. Both protein hydrolysates and pepsinized grass and papaverine are histamine liberators, and this might be the mode of action if any. Colton and Robson have already shown that pepsinized grass pollen and histamine give similar results.

The difficulty is to devise an experiment wherein the control body will not release histamine and in which the patient is unaware that the control is different from the alleged active agent.

Yours, etc.,

P. S. CLARKE.

268 Sandy Bay Road,
Hobart,
Tasmania.
September 20, 1957.

TRACHOMA AMONG NATIVES OF THE NORTHERN TERRITORY OF AUSTRALIA.

SIR: I wish to express appreciation to the Department of Histology and Embryology of the University of Sydney, and especially to Professor K. W. Cleland and Dr. Bevan Reid, for preparing the excellent photomicrographs used to illustrate the article on "Trachoma Among Natives of the Northern Territory of Australia", published in the Journal on August 24, 1957.

The staff of the department carefully looked over the material submitted from Darwin, photographed the relevant parts, and offered valuable comments. It is regretted that this acknowledgement did not appear along with the article when it was first published.

Yours, etc.,

FRANK FLYNN.

Darwin,
Northern Territory,
September 24, 1957.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Post-Graduate Conference at Newcastle: Surgery.

THE Post-Graduate Committee in Medicine in the University of Sydney, in conjunction with the Central Northern Medical Association, will hold a week-end conference in the Lecture Theatre, Royal Newcastle Hospital, on Saturday and Sunday, November 23 and 24, 1957. The programme will cover the section on surgery, and is as follows:

Saturday, November 23: 2.30 p.m., registration; 2.45 p.m., "The Surgery of Peptic Ulceration", Dr. V. J. Kinsella; 4.15 p.m., "Neonatal Surgical Emergencies", Dr. Eric Goulston.

Sunday, November 24: 10 a.m., "Diverticulitis", Dr. V. J. Kinsella; 11.30 a.m., "Treatment of the Undescended Testicle", Dr. Eric Goulston.

The 1957 Post-Graduate Conference at Newcastle is divided into the following three sections: (i) gynæcology and obstetrics (April), (ii) medicine (August), (iii) surgery (November). The combined fee for attendance is £3 3s., or £1 1s. for each section, and those wishing to attend are requested to notify Dr. J. N. Walker, Honorary Secretary Central Northern Medical Association, 22 Church Street, Newcastle, as soon as possible. Telephone: Newcastle B 1201.

TRAINING IN PSYCHIATRY AT McGILL UNIVERSITY.

THE Department of Psychiatry, McGill University, Montreal, has a limited number of openings for training, and applications are now being considered for July 1, 1958. Applicants must have graduated from an approved medical school and have had a general internship of one year. The four-year diploma course provides general basic preparation during the first two years. The last two years provide special patterns of instruction for those (*a*) planning to enter the field of general hospital, community or university psychiatry, (*b*) preparing themselves for a career in child psychiatry, and (*c*) intending to enter the field of research psychiatry. Credit may be allowed for previous training. Shorter periods of instruction may be arranged, as well as instruction in special fields.

Full training in psychoanalysis also may be undertaken within the Department of Psychiatry by suitably prepared candidates. Separate application for this training is required.

All those accepted for training are assigned to one of the seven teaching centres in Montreal. These positions carry with them board and lodging, or, in lieu of lodging, a living-out allowance together with an honorarium ranging from $60 to $150 a month, depending upon the clinical position to which the applicant is assigned. For those in the advanced years of the course, clinical positions carrying higher salaries are available. In several centres, additional emoluments of $1800 a year are available, mainly in the form of bursaries, these being issued under certain conditions in regard to which information will be given on request.

Applicants should write to the Chairman of the Department of Psychiatry, McGill University, Montreal, Canada.

SERVICES CANTEENS TRUST FUND: POST-GRADUATE SCHOLARSHIPS.

THE trustees of the Services Canteens Trust Fund are inviting applications for two post-graduate scholarships, one for study overseas and the other for study at an Australian university. The fields of study in which the scholarships may be awarded are as follows: (*a*) For study overseas: (i) any course at any approved university throughout the world; (ii) aeronautics in England and America; (iii) travelling scholarship in any field; an applicant wishing to pursue any other branch of study may apply to the trustees for a scholarship in that field. (*b*) For study in Australia: study or research in any approved subject at any Australian university.

The scholarship for study overseas is valued at £A800 *per annum*. The scholarship for study in Australia is valued at £600 *per annum*. Both scholarships will be tenable for a period of up to three years.

The scholarship is open to a child (including stepchild, adopted child or ex-nuptial child) of a person who was at any time between September 3, 1939, and June 30, 1947: (*a*) a member of the naval, military or air forces of the Commonwealth; or (*b*) a member of any nursing service or women's service attached or auxiliary to any branch of the Defence Force of the Commonwealth; including (*c*) members of the canteens staff of any ship of the Royal Australian Navy, and any person duly accredited to any part of the Defence Force who served in an official capacity on full-time paid duty.

Selection will be entirely on merit and will be competitive. A scholarship will be granted only to an applicant

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED SEPTEMBER 28, 1957.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	1	2(1)	5(2)	..	..	..	..	..	8
Amœbiasis	..	..	..	..	..	..	..	..	..
Ancylostomiasis	2	..	..	..	..	..	..	..	2
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	1	..	..	1(1)	..	..	..	..	2
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	..	5(5)	..	..	..	..	..	..	5
Diphtheria	..	..	..	2	1(1)	..	..	..	3
Dysentery (Bacillary)	..	..	1(1)	..	1	..	..	..	2
Encephalitis	..	..	..	..	..	..	..	..	..
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	1	..	..	..	..	1	..	..	2
Infective Hepatitis	53(33)	15(5)	4	6(6)	3(1)	4(4)	..	1	86
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	..	..	..
Leptospirosis	..	..	3	..	..	..	..	..	3
Malaria	..	..	..	..	..	..	..	..	..
Meningococcal Infection	..	1	..	..	..	..	..	..	1
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	..	..	..	..	..	..	..	..	..
Puerperal Fever	..	..	..	..	1	..	..	1	2
Rubella	..	79(36)	15(15)	51(10)	5(4)	..	2	..	152
Salmonella Infection	..	..	..	4(4)	1(1)	..	..	..	5
Scarlet Fever	15(10)	7(5)	12(1)	3(3)	2(2)	..	..	..	39
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	1	9(6)	..	..	..	..	10
Trachoma	..	..	..	..	13(9)	..	9	..	22
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	28(11)	20(10)	24(17)	4(4)	13(9)	3(1)	3	..	95
Typhoid Fever	..	..	..	..	1(1)	..	..	..	1
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

who, in the opinion of the trustees, has outstanding ability, is of suitable character and is likely to obtain lasting benefit to himself or herself and to Australia by further study. The scholarships will not necessarily be awarded each year. The following will be taken into consideration in determining the award of the scholarships: (i) academic career, (ii) ability for research work, (iii) character, (iv) the future value to Australia of the subject of research selected. The selection each year of the scholars to be awarded the scholarships will be made from all applications received from eligible persons by the prescribed closing dates.

Applications must be lodged with the General Secretary, Services Canteens Trust Fund, Victoria Barracks, St. Kilda Road, Melbourne, by the prescribed closing date. Applications should be transmitted through the Regional Secretary in the applicant's State. Applications for the scholarship for study overseas close on November 1, 1957. Applications for study in Australia close on January 10, 1958.

Application forms and any further information may be obtained from the General Secretary, whose address is shown above, or the Regional Secretary, Services Canteens Trust Fund, in each State. The addresses of Regional Secretaries are as follows: Victoria Barracks, Brisbane; 84 Pitt Street, Sydney; Victoria Barracks, Melbourne; 22 Grenfell Street, Adelaide; Swan Barracks, Perth; Anglesea Barracks, Hobart.

Medical Prizes.

AMERICAN COLLEGE OF CHEST PHYSICIANS PRIZE ESSAY CONTEST, 1958.

THE American College of Chest Physicians is offering three cash awards to winners of the 1958 prize essay contest. The contest is open to undergraduate medical students throughout the world. Essays may be written on any phase of the diagnosis and treatment of chest diseases (heart and/or lungs). The first prize will be $500, the second prize $300 and the third prize $200. Each winner will also receive a certificate.

The contest closes on April 15, 1958. Those desiring further information should write to the American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois, U.S.A.

Australian Medical Board Proceedings.

QUEENSLAND.

THE following have been registered, pursuant to the provisions of Section 19 (1) (a) and (c) of *The Medical Acts*, 1939 to 1955, of Queensland: Duhig, Robert Edward Taylor, M.B., B.S., 1955 (Univ. Queensland); Gale, Rowland Norman, M.B., B.S., 1955 (Univ. Queensland); Sear, Ernest Lloyd, M.B., Ch.B., 1955 (Univ. New Zealand); Leckie, Thomson David, M.B., B.S., 1955 (Univ. Sydney); Waters, Thomas Edward, M.B., B.S., 1956 (Univ. Queensland).

The following have been registered, pursuant to the provisions of Section 19 (1) (a) and (d) of *The Medical Acts*, 1939 to 1955, of Queensland: Pound, Allan Walton, M.B., B.S., 1943 (Univ. Melbourne); Elliott, Charles Edward, B.M., B.Ch., 1953 (Univ. Oxford), D.Obst., R.C.O.G., 1955; Richards, Maxwell John, M.B., B.S., 1954 (Univ. Adelaide); Rees, John Eryl, M.R.C.S. (England), L.R.C.P. (London), 1952; Catalano, Rupert, M.B., B.S., 1933 (Univ. Sydney); Fisher, Stephan, M.B., B.S., 1946 (Univ. Melbourne), M.D., 1952 (Univ. Melbourne), M.C.P.A., 1956; Fisher, Roderick William, M.B., B.S., 1952 (Univ. Sydney).

The following additional qualifications have been registered: Davis, Neville Coleman, F.R.A.C.S., 1956; Stringer, Robert Eric Charles, D.C.R.A., 1957.

Medical Appointments.

Dr. E. M. Rathus has been appointed Director of Industrial Medicine, Department of Health and Home Affairs, Brisbane, Queensland.

Dr. J. D. Litt has been appointed Resident Medical Officer for Mental Institutions, Hospitals Department, South Australia.

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Ledowsky, Wladimir, registered under Section 17 (2B) of the *Medical Practitioners Act*, 1938-1957, Bloomfield Hospital, Orange, New South Wales.

Diary for the Month.

OCT. 22.—New South Wales Branch, B.M.A.: Ethics Committee.
OCT. 23.—Victorian Branch, B.M.A.: Branch Council.
OCT. 24.—New South Wales Branch, B.M.A.: Clinical Meeting.
OCT. 25.—Queensland Branch, B.M.A.: Council Meeting.
OCT. 31.—New South Wales Branch, B.M.A.: Branch Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, 88 L'Estrange Terrace, Kelvin Grove, Brisbane, W.1): All applicants for Queensland State Government Insurance Office positions are advised to communicate with the Honorary Secretary of the Branch before accepting posts.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Editorial Notices.

ALL articles submitted for publication in this Journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary is stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this Journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

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